

ttgtttgccca aactggtggg caatatcgcc gaagacggcg gcaaaactgac ggattaccta 420
 gtttcgcatg ccgccctgca accctatcag gcaggcaaaa gcggctatgc cgccgtgcag 480
 aacggacgct atgtgctgga aatcgacagc gaaggggctg tttatttccg ccgccgccat 540
 tattga 546

<210> 712
 <211> 181
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 712
 Met Leu Lys Thr Ser Phe Ala Val Leu Gly Gly Cys Leu Leu Leu Ala
 1 5 10 15
 Ala Cys Gly Lys Ser Glu Asn Thr Ala Glu Gln Pro Gln Asn Ala Val
 20 25 30
 Gln Ser Ala Pro Lys Pro Val Phe Lys Val Lys Tyr Ile Asp Asn Thr
 35 40 45
 Ala Ile Ala Gly Leu Asp Leu Gly Gln Ser Ser Glu Gly Lys Thr Asn
 50 55 60
 Asp Gly Lys Lys Gln Ile Ser Tyr Pro Ile Lys Gly Leu Pro Glu Gln
 65 70 75 80
 Asn Val Ile Arg Leu Ile Gly Lys His Pro Gly Asp Leu Glu Ala Val
 85 90 95
 Ser Gly Lys Cys Met Glu Thr Asp Asp Lys Asp Ser Pro Ala Gly Trp
 100 105 110
 Ala Glu Asn Gly Val Cys His Thr Leu Phe Ala Lys Leu Val Gly Asn
 115 120 125
 Ile Ala Glu Asp Gly Gly Lys Leu Thr Asp Tyr Leu Val Ser His Ala
 130 135 140
 Ala Leu Gln Pro Tyr Gln Ala Gly Lys Ser Gly Tyr Ala Ala Val Gln
 145 150 155 160
 Asn Gly Arg Tyr Val Leu Glu Ile Asp Ser Glu Gly Ala Phe Tyr Phe
 165 170 175
 Arg Arg Arg His Tyr
 180

<210> 713
 <211> 330
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 713
 cctcttaaag gcttgccgga acaaaacgtc gtccggctga ccggcaagca tcccaacgac 60
 ttggaagccg tcgtcggcaa atgtatggaa accgacggaa agggcgcgcc ttcgggctg 120

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gcg gcaaacg gcgtgtgcc taccttggtt gccaaactgg tgggcaatat cgccgaagac 180
ggcggcaaac tgacggatta cctgatttcg cattccgccc tgcaacccta tcaggcaggc 240
aaaagcggt atgccgccgt gcagaacgga cgctatgtgc tggaaatcga cagcgagggg 300
gcgtttttatt tccgccgccg ccattattga 330

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<210> 714
 <211> 109
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 714
 Pro Leu Lys Gly Leu Pro Glu Gln Asn Val Val Arg Leu Thr Gly Lys
 1 5 10 15
 His Pro Asn Asp Leu Glu Ala Val Val Gly Lys Cys Met Glu Thr Asp
 20 25 30
 Gly Lys Gly Ala Pro Ser Gly Trp Ala Ala Asn Gly Val Cys His Thr
 35 40 45
 Leu Phe Ala Lys Leu Val Gly Asn Ile Ala Glu Asp Gly Gly Lys Leu
 50 55 60
 Thr Asp Tyr Leu Ile Ser His Ser Ala Leu Gln Pro Tyr Gln Ala Gly
 65 70 75 80
 Lys Ser Gly Tyr Ala Ala Val Gln Asn Gly Arg Tyr Val Leu Glu Ile
 85 90 95
 Asp Ser Glu Gly Ala Phe Tyr Phe Arg Arg Arg His Tyr
 100 105

<210> 715
 <211> 534
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 715
 atgttttccc ccgacaaaac ccttttcctc tgtctcggcg cactgctcct cgcctcatgc 60
 ggcagcacct ccggcaaac ccgccaaccg aaaccctaac agacagtccg gcaaatccaa 120
 gccgtccgca tcagccacat cggccgcaca caaggctcgc aggaactcat gctccacagc 180
 ctcggaactca tcggcacgcc ctacaaatgg ggcggcagca gcaccgcaac cggcttcgac 240
 tgcagcggca tgattcaatt ggtttacaaa aacgccctca acgtcaagct gccgcgcacc 300
 gcccgcgaca tggcggcggc aagccgcaaa atccccgaca gccgcctcaa ggccggcgac 360
 atcgtattct tcaacaccgg cggcgcacac cgctactcac acgtcggact ctacatcggc 420
 aacggcgaat tcatccatgc ccccggcagc ggcaaaacca tcaaaaccga aaaactctcc 480
 acaccgtttt acgccaaaaa ctaccttgga gcgcatacgt tttttacaga atga 534

<210> 716
 <211> 177
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 716

Met Phe Ser Pro Asp Lys Thr Leu Phe Leu Cys Leu Gly Ala Leu Leu
 1 5 10 15
 Leu Ala Ser Cys Gly Thr Thr Ser Gly Lys His Arg Gln Pro Lys Pro
 20 25 30
 Lys Gln Thr Val Arg Gln Ile Gln Ala Val Arg Ile Ser His Ile Gly
 35 40 45
 Arg Thr Gln Gly Ser Gln Glu Leu Met Leu His Ser Leu Gly Leu Ile
 50 55 60
 Gly Thr Pro Tyr Lys Trp Gly Gly Ser Ser Thr Ala Thr Gly Phe Asp
 65 70 75 80
 Cys Ser Gly Met Ile Gln Leu Val Tyr Lys Asn Ala Leu Asn Val Lys
 85 90 95
 Leu Pro Arg Thr Ala Arg Asp Met Ala Ala Ala Ser Arg Lys Ile Pro
 100 105 110
 Asp Ser Arg Leu Lys Ala Gly Asp Ile Val Phe Phe Asn Thr Gly Gly
 115 120 125
 Ala His Arg Tyr Ser His Val Gly Leu Tyr Ile Gly Asn Gly Glu Phe
 130 135 140
 Ile His Ala Pro Gly Ser Gly Lys Thr Ile Lys Thr Glu Lys Leu Ser
 145 150 155 160
 Thr Pro Phe Tyr Ala Lys Asn Tyr Leu Gly Ala His Thr Phe Phe Thr
 165 170 175

Glu

<210> 717
 <211> 534
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 717
 atgtttcccc ccgacaaaac cctttttcctc tgtctcagcg cactgctcct cgcctcatgc 60
 ggcacgacct ccggcaaaca ccgccaaccg aaacccaaac agacagtccg gcaaatacaa 120
 gccgtccgca tcagccacat cgaccgcaca caaggctcgc aggaactcat gctccacagc 180
 ctcggactca tcggcacgcc ctacaaatgg ggccggcagca gcaccgcaac cggcttcgat 240
 tgcagcggca tgattcaatt cgtttacaar aacgccctca acgtcaagct gccgcgcacc 300
 gcccgcgaca tggcggcggc aagccgsaaa atccccgaca gccgcytaa ggccggcgac 360
 ctcgtattct tcaacaccgg cggcgcacac cgctactcac acgtcggact ctacatcggc 420
 aacggcgaat tcatccatgc ccccagcagc ggcaaaacca tcaaaaccga aaaactctcc 480
 acaccgtttt acgccaaaaa ctacctcggc gcacatactt tttttacaga atga 534

<210> 718
 <211> 177
 <212> PRT

<213> Neisseria meningitidis

<400> 718

Met Phe Pro Pro Asp Lys Thr Leu Phe Leu Cys Leu Ser Ala Leu Leu
1 5 10 15
Leu Ala Ser Cys Gly Thr Thr Ser Gly Lys His Arg Gln Pro Lys Pro
20 25 30
Lys Gln Thr Val Arg Gln Ile Gln Ala Val Arg Ile Ser His Ile Asp
35 40 45
Arg Thr Gln Gly Ser Gln Glu Leu Met Leu His Ser Leu Gly Leu Ile
50 55 60
Gly Thr Pro Tyr Lys Trp Gly Gly Ser Ser Thr Ala Thr Gly Phe Asp
65 70 75 80
Cys Ser Gly Met Ile Gln Phe Val Tyr Lys Asn Ala Leu Asn Val Lys
85 90 95
Leu Pro Arg Thr Ala Arg Asp Met Ala Ala Ala Ser Arg Lys Ile Pro
100 105 110
Asp Ser Arg Xaa Lys Ala Gly Asp Leu Val Phe Phe Asn Thr Gly Gly
115 120 125
Ala His Arg Tyr Ser His Val Gly Leu Tyr Ile Gly Asn Gly Glu Phe
130 135 140
Ile His Ala Pro Ser Ser Gly Lys Thr Ile Lys Thr Glu Lys Leu Ser
145 150 155 160
Thr Pro Phe Tyr Ala Lys Asn Tyr Leu Gly Ala His Thr Phe Phe Thr
165 170 175

Glu

<210> 719

<211> 534

<212> DNA

<213> Neisseria meningitidis

<400> 719

atgtttcccc ccgacaaaac ctttttctct tgtctcagcg cactgctcct cgcctcatgc 60
ggcacgacct ccggcaaaaca ccgccaaccg aaacccaaac agacagtcgg gcaaataccaa 120
gocgtccgca tcagccacat cgaccgcaca caaggctcgc aggaactcat gctccacagc 180
ctcggactca tcggcacgcc ctacaaatgg ggcggcagca gcaccgcaac cggcttcgat 240
tgcagcggca tgattcaatt cgtttacaaa aacgccctca acgtcaagct gccgcgcacc 300
gcccgcgaca tggcgggcggc aagccgcaaa atccccgaca gccgccttaa ggccggcgac 360
ctcgtattct tcaacaccgg cggcgcacac cgctactcac acgtcggact ctatatcggc 420
aacggcgaat tcatccatgc ccccagcagc ggcaaaacca tcaaaaccga aaaactctcc 480
acaccgtttt acgccaacaaa ctacctcggc gcacatactt tctttacaga atga 534

<210> 720
 <211> 177
 <212> PRT
 <213> Neisseria meningitidis

<400> 720
 Met Phe Pro Pro Asp Lys Thr Leu Phe Leu Cys Leu Ser Ala Leu Leu
 1 5 10 15
 Leu Ala Ser Cys Gly Thr Thr Ser Gly Lys His Arg Gln Pro Lys Pro
 20 25 30
 Lys Gln Thr Val Arg Gln Ile Gln Ala Val Arg Ile Ser His Ile Asp
 35 40 45
 Arg Thr Gln Gly Ser Gln Glu Leu Met Leu His Ser Leu Gly Leu Ile
 50 55 60
 Gly Thr Pro Tyr Lys Trp Gly Gly Ser Ser Thr Ala Thr Gly Phe Asp
 65 70 75 80
 Cys Ser Gly Met Ile Gln Phe Val Tyr Lys Asn Ala Leu Asn Val Lys
 85 90 95
 Leu Pro Arg Thr Ala Arg Asp Met Ala Ala Ala Ser Arg Lys Ile Pro
 100 105 110
 Asp Ser Arg Leu Lys Ala Gly Asp Leu Val Phe Phe Asn Thr Gly Gly
 115 120 125
 Ala His Arg Tyr Ser His Val Gly Leu Tyr Ile Gly Asn Gly Glu Phe
 130 135 140
 Ile His Ala Pro Ser Ser Gly Lys Thr Ile Lys Thr Glu Lys Leu Ser
 145 150 155 160
 Thr Pro Phe Tyr Ala Lys Asn Tyr Leu Gly Ala His Thr Phe Phe Thr
 165 170 175
 Glu

<210> 721
 <211> 780
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 721
 atgctgcggc atttaggaaa cgacttcgcc ttgggcgcgt tgtttttcga tgctgcggtt 60
 gatgtgccac tgctgggcga tggtcaggag gttgttgacc acccagtaga gaaccaaacc 120
 ggcaggggaag aagaagaaca tgacggagaa aaccaacggc atgattttca tcattttcgc 180
 ctgcatcggg tcggtcggcg gcgggttcag ataggtttg gcgaacatcg ttgccgccat 240
 aatgatgggc aggatgtagt aggggtcggc gcggctgagg tcggtaatcc agcccagcca 300
 aggtgcctgg cgcaattcta cggaggcgaa caatgcccg tacaagccga tgaagacggg 360
 gatttgcaac agcataggca gacagccgcc cagcgggttg atttcctcgt .cttcgaaaag 420
 ctgcatcatc gcttgctgtt gcgccatacg gtcgtcgccg tatttttctt tgatggtctg 480

cagttcgggt gcggcggcac gcattttcgc catcgaacgg taggaggcgt tgggtcaatgg 540
 atacagtacg gctttgacga tgatgggtcaa aacgacgatt gccagcccc agttgccgat 600
 aatgttgtgc agttgggttca ggagccagaa gagcggcgat gcgaaccagt gtactttacc 660
 gtagtctttt gccagttgca gggtgtcggc gatgtttgcg ataacggatg tggtttgcgg 720
 accggcatac aggttgaccg ccattttcgg ttttggcccc cgggttggga tagcgggtaa 780

<210> 722

<211> 259

<212> PRT

<213> Neisseria gonorrhoeae

<400> 722

Met	Leu	Arg	His	Leu	Gly	Asn	Asp	Phe	Ala	Leu	Gly	Ala	Leu	Phe	Phe	1	5	10	15
Asp	Ala	Ala	Val	Asp	Val	Pro	Leu	Leu	Gly	Asp	Gly	Gln	Glu	Val	Val	20	25	30	
Asp	His	Pro	Val	Glu	Asn	Gln	Thr	Gly	Arg	Glu	Glu	Glu	Glu	His	Asp	35	40	45	
Gly	Glu	Asn	Gln	Arg	His	Asp	Phe	His	His	Phe	Arg	Leu	His	Arg	Val	50	55	60	
Gly	Arg	Arg	Arg	Val	Gln	Ile	Gly	Leu	Gly	Glu	His	Arg	Cys	Arg	His	65	70	75	80
Asn	Asp	Gly	Gln	Asp	Val	Val	Gly	Val	Gly	Ala	Ala	Glu	Val	Gly	Asn	85	90	95	
Pro	Ala	Gln	Pro	Arg	Cys	Leu	Ala	Gln	Phe	Tyr	Gly	Gly	Glu	Gln	Cys	100	105	110	
Pro	Val	Gln	Ala	Asp	Glu	Asp	Gly	Asp	Leu	Gln	Gln	His	Arg	Gln	Thr	115	120	125	
Ala	Ala	Gln	Arg	Val	Asp	Phe	Leu	Val	Phe	Glu	Lys	Leu	His	His	Arg	130	135	140	
Leu	Leu	Leu	Arg	His	Thr	Val	Val	Ala	Val	Phe	Phe	Phe	Asp	Gly	Leu	145	150	155	160
Gln	Phe	Gly	Cys	Gly	Gly	Thr	His	Phe	Arg	His	Arg	Thr	Val	Gly	Gly	165	170	175	
Val	Gly	Gln	Trp	Ile	Gln	Tyr	Gly	Phe	Asp	Asp	Asp	Gly	Gln	Asn	Asp	180	185	190	
Asp	Cys	Pro	Ala	Pro	Val	Ala	Asp	Asn	Val	Val	Gln	Leu	Val	Gln	Glu	195	200	205	
Pro	Glu	Glu	Arg	Arg	Cys	Glu	Pro	Val	Tyr	Phe	Thr	Val	Val	Phe	Cys	210	215	220	
Gln	Leu	Gln	Val	Val	Gly	Asp	Val	Cys	Asp	Asn	Gly	Cys	Gly	Leu	Arg	225	230	235	240

Thr Gly Ile Gln Val Asp Arg His Phe Arg Phe Trp Pro Pro Gly Trp

245

250

255

Asp Ser Gly

<210> 723

<211> 1025

<212> DNA

<213> Neisseria meningitidis

<400> 723

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atgtgccatt gctgggcgat ggtcaggagg ttgttgacta cccagtacaa taccagaccg 120
gcagggaaga agaagaacat gacggagaaa accaacggca tgattttcat cattttcgcc 180
tgcacgcggg cggtcggcgg cggttcgaga taagtttggg cgaacatcgt tgccgccata 240
atgatgggca ggatgtagta ggggtcggcg cggtgaggt cggtaatcca acccagccaa 300
gggtgcctggc gcaattctac ggaggcgaac aatgcccaat acaatccgat gaagacgggg 360
atttgcaaca gcataggcag gcagccgccc agcgggttga tttctcgtc tgtgtaaagc 420
tgcacatcgt cctgttggtg cgccatacgg tcgtcgccgt atttctctt gatggcttgc 480
agtttgggtg cggcggcacg cattttcgcc atagagcggg aagaggcggt ggtcaatgga 540
tacagtacgg ctttgacgat gatggttaaa acgataatcg cccagcccca gttgccgatg 600

atgttgtgca gttggttcag gagccagaag agcggggagg cgaaccagtg tactttgccg 660
tagtcttttg ccagttgcag gttgtcggcg atgtttgcga tgacggatgt ggtctgcggg 720
ccggcgtaga ggttgatgga ggcttcgggt tcgcgcggtt ttggatggcg gctaaaggca 780
cgctgacgct ggtgctgtac agcttgctgt tcgggcggtt gatgtcgatg ttgcactcgc 840
ctgcggcgca aacgctttgt ctgcctttag gttggagaat ccagggtggac atgaagtggg 900
gttcaatcat gccgagccag ccggtcgggg ttttgcggat gtattcggcc tcggatttgc 960
cggatttggc atcgtcgtcc aagtcggaaa agctgacttt ttggaagttg ccttcagggg 1020
tataa 1025
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<210> 724

<211> 340

<212> PRT

<213> Neisseria meningitidis

<400> 724

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Met Leu Arg His Leu Gly Asn Asp Phe Ala Leu Gly Ala Leu Phe Phe
  1             5             10            15

Asp Ala Ala Val Asp Val Pro Leu Leu Gly Asp Gly Gln Glu Val Val
    20             25             30

Asp Tyr Pro Val Gln Tyr Gln Thr Gly Arg Glu Glu Glu Glu His Asp
    35             40             45

Gly Glu Asn Gln Arg His Asp Phe His His Phe Arg Leu His Arg Val
    50             55             60

Gly Arg Arg Arg Val Gln Ile Ser Leu Gly Glu His Arg Cys Arg His
    65             70             75             80
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Asn Asp Gly Gln Asp Val Val Gly Val Gly Ala Ala Glu Val Gly Asn
 85 90 95
 Pro Thr Gln Pro Arg Cys Leu Ala Gln Phe Tyr Gly Gly Glu Gln Cys
 100 105 110
 Pro Ile Gln Ser Asp Glu Asp Gly Asp Leu Gln Gln His Arg Gln Ala
 115 120 125
 Ala Ala Gln Arg Val Asp Phe Leu Val Cys Val Lys Leu His His Arg
 130 135 140
 Leu Leu Leu Arg His Thr Val Val Ala Val Phe Leu Phe Asp Gly Leu
 145 150 155 160
 Gln Phe Gly Cys Gly Gly Thr His Phe Arg His Arg Ala Val Arg Gly
 165 170 175
 Val Gly Gln Trp Ile Gln Tyr Gly Phe Asp Asp Asp Gly Asn Asp Asn
 180 185 190
 Arg Pro Ala Pro Val Ala Asp Asp Val Val Gln Leu Val Gln Glu Pro
 195 200 205
 Glu Glu Arg Gly Gly Glu Pro Val Tyr Phe Ala Val Val Phe Gly Gln
 210 215 220
 Leu Gln Val Val Gly Asp Val Cys Asp Asp Gly Cys Gly Leu Arg Ala
 225 230 235 240
 Gly Val Glu Val Asp Gly Gly Phe Gly Phe Ala Pro Phe Trp Met Ala
 245 250 255
 Ala Lys Gly Thr Leu Thr Leu Val Leu Tyr Ser Leu Ser Leu Arg Arg
 260 265 270
 Leu Met Ser Met Leu His Ser Pro Ala Ala Gln Thr Leu Cys Leu Pro
 275 280 285
 Leu Gly Trp Arg Ile Gln Val Asp Met Lys Trp Cys Ser Ile Met Pro
 290 295 300
 Ser Gln Pro Val Gly Val Leu Arg Met Tyr Ser Ala Ser Asp Leu Pro
 305 310 315 320
 Asp Leu Ala Ser Ser Ser Lys Ser Glu Lys Leu Thr Phe Trp Lys Leu
 325 330 335
 Pro Ser Gly Val
 340

<210> 725

<211> 1026

<212> DNA

<213> Neisseria meningitidis

<400> 725

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atgctgcggc atttaggaaa cgacttcgcc ttgggcgcgt tgtttttcga tgctgcgggt 60
gatgtgccat tgctgggcga tggtcaggag gttgttgatc acccagtaca ataccagacc 120
ggcagggaag aagaagaaca tgacggagaa aaccaaaggc atgattttca tcatttttcgc 180
ctgcatcggg tcggtcggcg gcgggttcag ataggttttg gcgaacatcg ttgccgccat 240
aatgatgggc aggatgtagt aggggtcggc gcggctgagg tcggtaatcc aaccagcca 300
aggtgcctgg cgcaattcta cggaggcgaa caatgccaa tacaatccga tgaagacggg 360
gatttgcaac agcataggca ggcagccgcc cagcgggttg attttctcgt ctgtgtaaag 420
ctgcatcatg gcttgttgct gcgccatacg gtcgtcgccg tatttctctt tgatggcttg 480
cagtttgggc gcggcggcac gcattttcgc catcgaacgg taagaggcgt tggccaatgg 540
atacagtacg gctttgacga tgatggttaa aacgataatc gccagcccc agttgccgat 600
gatgttgatc agttggttca aaagccaaaa gaggggggag gcgaaccagt gtactttgcc 660
gtagtctttg gccagttgca ggttgtcggc gatgtttgcg ataacggatg tggctctgtg 720
gccgcgtag aggttgatgg aggttcggg ttgcaccgt tttggatagc ggctaaaggc 780
acgctgacgc tgggtgctga cagcttgctg ttgcggcggt tgatgtcgat acggcagtcg 840
ccagcggcgc aaacgctttg tccgcctttg ggttgaggga tccaggtgga catgaagtgg 900
tgttcaatca tgccgagcca gccggtcggg gttttgcgga tgtattcggc ctcggatttg 960
ccggatttgg catcgtcgtc caagtcggag aagctgactt tttggaagtt gccttcaggg 1020
gtataa 1026
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<210> 726

<211> 340

<212> PRT

<213> *Neisseria meningitidis*

<400> 726

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Met Leu Arg His Leu Gly Asn Asp Phe Ala Leu Gly Ala Leu Phe Phe
  1             5             10             15

Asp Ala Ala Val Asp Val Pro Leu Leu Gly Asp Gly Gln Glu Val Val
      20             25             30

Asp His Pro Val Gln Tyr Gln Thr Gly Arg Glu Glu Glu Glu His Asp
      35             40             45

Gly Glu Asn Gln Arg His Asp Phe His His Phe Arg Leu His Arg Val
      50             55             60

Gly Arg Arg Arg Val Gln Ile Gly Leu Gly Glu His Arg Cys Arg His
      65             70             75             80

Asn Asp Gly Gln Asp Val Val Gly Val Gly Ala Ala Glu Val Gly Asn
      85             90             95

Pro Thr Gln Pro Arg Cys Leu Ala Gln Phe Tyr Gly Gly Glu Gln Cys
      100            105            110

Pro Ile Gln Ser Asp Glu Asp Gly Asp Leu Gln Gln His Arg Gln Ala
      115            120            125

Ala Ala Gln Arg Val Asp Phe Leu Val Cys Val Lys Leu His His Gly
      130            135            140

Leu Leu Leu Arg His Thr Val Val Ala Val Phe Leu Phe Asp Gly Leu
      145            150            155            160
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Gln Phe Gly Arg Gly Gly Thr His Phe Arg His Arg Thr Val Arg Gly
 165 170 175
 Val Gly Gln Trp Ile Gln Tyr Gly Phe Asp Asp Asp Gly Asn Asp Asn
 180 185 190
 Arg Pro Ala Pro Val Ala Asp Asp Val Val Gln Leu Val Gln Lys Pro
 195 200 205
 Lys Glu Gly Gly Gly Glu Pro Val Tyr Phe Ala Val Val Phe Gly Gln
 210 215 220
 Leu Gln Val Val Gly Asp Val Cys Asp Asn Gly Cys Gly Leu Trp Ala
 225 230 235 240
 Gly Val Glu Val Asp Gly Gly Phe Gly Phe Ala Pro Phe Trp Ile Ala
 245 250 255
 Ala Lys Gly Thr Leu Thr Leu Val Leu Tyr Ser Leu Ser Leu Arg Arg
 260 265 270
 Leu Met Ser Ile Arg Gln Ser Pro Ala Ala Gln Thr Leu Cys Pro Pro
 275 280 285
 Leu Gly Trp Arg Ile Gln Val Asp Met Lys Trp Cys Ser Ile Met Pro
 290 295 300
 Ser Gln Pro Val Gly Val Leu Arg Met Tyr Ser Ala Ser Asp Leu Pro
 305 310 315 320
 Asp Leu Ala Ser Ser Ser Lys Ser Glu Lys Leu Thr Phe Trp Lys Leu
 325 330 335
 Pro Ser Gly Val
 340

<210> 727
 <211> 525
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 727
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 ggggtcgata agtttgggcg tgggtctgat aatcaggttg agtttttgga aggaaacctg 120
 attgtagtcg gcgcgtccgg gcgtgccgt gtaacggtag ccgtggcgca attcgagcgt 180
 gcgtttgttg tccttcagcg agaagttacc ttctttggcg aagatgatgt tgtcgccgcc 240
 gtttttgtcc tgttcgcgca ggaacaggtt tttcatgatg ccggattcgg tgtcaaaagg 300
 ttcgacgaaa taaacctgc cgttgcgctt gcccaagtta ttgaactcgc cggcttccac 360
 caaagacaat tcctgcttct gcttcaaaat ttcggcatat tcgcggctgc gcagctctgc 420
 ccacggtatc acccaaagct gcatgacggc aatcaggatg gcaaacggca cggcaaactg 480
 catgacgggg cgtatccact gtttcaacgc caatccgcag gatag 525

<210> 728
 <211> 174

<212> PRT
<213> Neisseria gonorrhoeae

<400> 728
Met Leu Arg Ile Ala Ala Ala Asn Gln Leu Gly Gly Arg Asn Gly Ala
1 5 10 15
Ala Val Gly Asn Gly Val Asp Lys Phe Gly Arg Gly Ala Asp Asn Gln
20 25 30
Val Glu Phe Leu Glu Gly Asn Leu Ile Val Val Gly Ala Ser Gly Arg
35 40 45
Ala Ala Val Thr Val Ala Val Ala Gln Phe Glu Arg Ala Phe Val Val
50 55 60
Leu Gln Arg Glu Val Thr Phe Phe Gly Glu Asp Asp Val Val Ala Ala
65 70 75 80
Val Phe Val Leu Phe Ala Gln Glu Gln Val Phe His Asp Ala Gly Phe
85 90 95
Gly Val Lys Gly Phe Asp Glu Ile Asn Pro Ala Val Ala Leu Ala Gln
100 105 110
Val Ile Glu Leu Ala Gly Phe His Gln Arg Gln Phe Leu Leu Leu Leu
115 120 125
Gln Asn Phe Gly Ile Phe Ala Ala Ala Gln Leu Cys Pro Arg Tyr His
130 135 140
Pro Lys Leu His Asp Gly Asn Gln Asp Gly Lys Arg His Gly Lys Leu
145 150 155 160
His Asp Gly Ala Tyr Pro Leu Phe Gln Arg Gln Ser Ala Gly
165 170

<210> 729
<211> 525
<212> DNA
<213> Neisseria meningitidis

<400> 729
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ggggtcgatg agtttgggcg tgggtctgat aatcaggttg agtttttgga aggaaacctg 120
attgtagtcg gcgcgtccgg gcgtgccgct gtaacggtag ccgtggcgca attcgagcgt 180
gcgtttgttg tcgttcagcg agaagttacc ttctttggcg aagatgatgt tgcgccgcc 240
gtttttgtcc tgttcgcgca ggaacagggt ttcatgatg ccgattcgg tatcgaaggt 300
ttcgacaaaa taaacctgc cgttgcgctt gcccaactg ttgaactcgc ctgcctccac 360
caaagacaat tcctgcttct gcttcaggat ttcagcgtat tcgcggctgc gtagctctgc 420
ccacggtatc acccaaagct gcatgacggc aaccaaaacg gcaaacggca cggcaaacgt 480
catcaccggg cgtatccatt gtttcaatgc caatccgcag gatag 525

<210> 730
<211> 174

<212> PRT

<213> *Neisseria meningitidis*

<400> 730

Met Leu Arg Val Ala Ala Ala Asn Gln Leu Gly Gly Arg Asn Gly Thr
1 5 10 15

Ala Val Gly Asn Gly Val Asp Glu Phe Gly Arg Gly Ala Asp Asn Gln
20 25 30

Val Glu Phe Leu Glu Gly Asn Leu Ile Val Val Gly Ala Ser Gly Arg
35 40 45

Ala Ala Val Thr Val Ala Val Ala Gln Phe Glu Arg Ala Phe Val Val
50 55 60

Val Gln Arg Glu Val Thr Phe Phe Gly Glu Asp Asp Val Val Ala Ala
65 70 75 80

Val Phe Val Leu Phe Ala Gln Glu Gln Val Phe His Asp Ala Gly Phe
85 90 95

Gly Ile Glu Gly Phe Asp Lys Ile Asn Pro Ala Val Ala Leu Ala Gln
100 105 110

Thr Val Glu Leu Ala Cys Leu His Gln Arg Gln Phe Leu Leu Leu Leu
115 120 125

Gln Asp Phe Ser Val Phe Ala Ala Ala Xaa Leu Cys Pro Arg Tyr His
130 135 140

Pro Lys Leu His Asp Gly Asn Gln Asn Gly Lys Arg His Gly Lys Leu
145 150 155 160

His His Arg Ala Tyr Pro Leu Phe Gln Cys Gln Ser Ala Gly
165 170

<210> 731

<211> 525

<212> DNA

<213> *Neisseria meningitidis*

<400> 731

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attgtagtcg gcgcgtccgg gcgtgccgct gtaacggtag ccgtggcgca attcgagcgt 180
gcgtttgttg tcgttcagcg agaagttact ttctttggcg aagatgatgt tgtcgcccgc 240
gtttttgtcc tgttcgcgca ggaacaggtt tttcatgatg ccggaattcg tatcgaaggt 300
ttcgacaaaa taaaccttgc cgttgcgctt gcccaaactg ttgaaccgcg ctgcctccac 360
caaagacaat tcctgcttct gcttcaggat ttcagcgtat tcgcggctgc gtagctctgc 420
ccacggatc acccaaagct gcatgacggc aaccaaacg gcaaacggca cggcaaactg 480
catcaccggg cgtatccatt gtttcaatgc caatccgcag gatag 525

<210> 732

<211> 173

<212> PRT
<213> Neisseria meningitidis

<400> 732

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1 5 10 15
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20 25 30
Val Glu Phe Leu Glu Gly Asn Leu Ile Val Val Gly Ala Ser Gly Arg
35 40 45
Ala Ala Val Thr Val Ala Val Ala Gln Phe Glu Arg Ala Phe Val Val
50 55 60
Val Gln Arg Glu Val Thr Phe Phe Gly Glu Asp Asp Val Val Ala Ala
65 70 75 80
Val Phe Val Leu Phe Ala Gln Glu Gln Val Phe His Asp Ala Gly Phe
85 90 95
Gly Ile Glu Gly Phe Asp Lys Ile Asn Pro Ala Val Ala Leu Ala Gln
100 105 110
Thr Val Glu Pro Ala Cys Leu His Gln Arg Gln Phe Leu Leu Leu Leu
115 120 125
Gln Asp Phe Ser Val Phe Ala Ala Ala Leu Cys Pro Arg Tyr His Pro
130 135 140
Lys Leu His Asp Gly Asn Gln Asn Gly Lys Arg His Gly Lys Leu His
145 150 155 160
His Arg Ala Tyr Pro Leu Phe Gln Cys Gln Ser Ala Gly
165 170

<210> 733

<211> 1263

<212> DNA

<213> Neisseria gonorrhoeae

<400> 733

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caaaccgcac aagatgcttc ggactcggaa tgccgtctga agcaccgttt ggatcaggca 180
accagtgcc tccagttcga cagcatcaac ctcatcgaac acatcctgcc cgatgtccgc 240
ttctggctgg ttcccccttc acgcaccgc cgctgcacg aacacttcca ccacatttcc 300
tggcagaccg aagccatccc gcaaaccgaa agcaagtccg acaaaccctg gtttgcactt 360
ccacaaacat ccgaacggaa aaaaccggaa cacgtcctcg tcatcggtgc aggcattgcc 420
ggcgcacga ccgcccacgc cttagcatca cacggcattt ccgttaccgt attggaagcc 480
cgaaaagccg ctcaagccgc cagcggcaac cggcaagggc tgctttacgc caaaatctcg 540
ccgcacgaca ccggacagac cgaactgctg cttgccggct acggctacac caaacgcctg 600
ctcggacaca tcttgcccga ctccgacact tggggcggca acggcatcat ccacctcaat 660
tacagccgca ccgaacaaca acgcaatcac gaattgggtt tgcaaaaaca ccataaccac 720
ctctaccgca gcatcacgtc tgcagaagcc gaaaaaatcg ccggcatccc gctgaacacg 780

```

ccctacgccg aaccattatg cggactctac tggcaacacg gcgtatggct caatccgccc 840
gcattcgtcc gcaccctcct cagccatccg ctgatcgaac tatatgaaaa cacaacgtta 900
accggcattt cccacgacgg agaaaagtgg attgcaagca cgccaaacgg cacatttacc 960
gccacacaca tcattctactg caccggcgcg cacagcccct gcctgcccga aaccaacctc 1020
gccgccttac cctcaggga aatacgcgga caaaccggcc tcacaccgtc caccctgttt 1080
tccgaacaac tgcgttgcg cgtttcaggc gaaagctaca tcagcccgtc gtggcacgga 1140
ctgcactgct acggcgcgag ttttattccc aacagcagca ataccggatg gaacgaagcc 1200
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ttt
1263

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<210> 734

<211> 421

<212> PRT

<213> Neisseria gonorrhoeae

<400> 734

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Met Asp Asn Leu Val Trp Asp Gly Ile Pro Asp Ile Arg Thr Leu Asp
 1             5             10             15

```

```

Gln Thr Ile Arg Lys His Ala His Pro Leu Asn Leu Ile Val Cys Leu
          20             25             30

```

```

Pro Asp Asn Gln Ile Pro Asp Phe Gln Thr Ala Gln Asp Ala Ser Asp
          35             40             45

```

```

Ser Glu Cys Arg Leu Lys His Arg Leu Asp Gln Ala Thr Gln Cys Leu
          50             55             60

```

```

Gln Phe Asp Ser Ile Asn Leu Ile Glu His Ile Leu Pro Asp Val Arg
          65             70             75             80

```

```

Phe Trp Leu Val Pro Pro Ser Arg Thr Arg Arg Leu His Glu His Phe
          85             90             95

```

```

His His Ile Ser Trp Gln Thr Glu Ala Ile Pro Gln Thr Glu Ser Lys
          100             105             110

```

```

Ser Asp Lys Pro Trp Phe Ala Leu Pro Gln Thr Ser Glu Arg Lys Lys
          115             120             125

```

```

Pro Glu His Val Leu Val Ile Gly Ala Gly Ile Ala Gly Ala Ser Thr
          130             135             140

```

```

Ala His Ala Leu Ala Ser His Gly Ile Ser Val Thr Val Leu Glu Ala
          145             150             155             160

```

```

Arg Lys Ala Ala Gln Ala Ala Ser Gly Asn Arg Gln Gly Leu Leu Tyr
          165             170             175

```

```

Ala Lys Ile Ser Pro His Asp Thr Gly Gln Thr Glu Leu Leu Leu Ala
          180             185             190

```

```

Gly Tyr Gly Tyr Thr Lys Arg Leu Leu Gly His Ile Leu Pro Asp Ser
          195             200             205

```

```

Asp Thr Trp Gly Gly Asn Gly Ile Ile His Leu Asn Tyr Ser Arg Thr

```

210 215 220
 Glu Gln Gln Arg Asn His Glu Leu Gly Leu Gln Lys His His Asn His
 225 230 235 240
 Leu Tyr Arg Ser Ile Thr Ser Ala Glu Ala Glu Lys Ile Ala Gly Ile
 245 250 255
 Pro Leu Asn Thr Pro Tyr Ala Glu Pro Leu Cys Gly Leu Tyr Trp Gln
 260 265 270
 His Gly Val Trp Leu Asn Pro Pro Ala Phe Val Arg Thr Leu Leu Ser
 275 280 285
 His Pro Leu Ile Glu Leu Tyr Glu Asn Thr Thr Leu Thr Gly Ile Ser
 290 295 300
 His Asp Gly Glu Lys Trp Ile Ala Ser Thr Pro Asn Gly Thr Phe Thr
 305 310 315 320
 Ala Thr His Ile Ile Tyr Cys Thr Gly Ala His Ser Pro Cys Leu Pro
 325 330 335
 Glu Thr Asn Leu Ala Ala Leu Pro Leu Arg Gln Ile Arg Gly Gln Thr
 340 345 350
 Gly Leu Thr Pro Ser Thr Pro Phe Ser Glu Gln Leu Arg Cys Ala Val
 355 360 365
 Ser Gly Glu Ser Tyr Ile Ser Pro Ser Trp His Gly Leu His Cys Tyr
 370 375 380
 Gly Ala Ser Phe Ile Pro Asn Ser Ser Asn Thr Gly Trp Asn Glu Ala
 385 390 395 400
 Glu Glu Ala Ser Asn Arg Gln Ala Leu Ala His Leu Asn Pro Ala Leu
 405 410 415
 Ala Glu Ser Leu Phe
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<210> 735

<211> 1620

<212> DNA

<213> Neisseria meningitidis

<400> 735

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 aaacacgcac ccccgctcaa cctgattatc tgcctccccg ataatcagat tcccgatttt 120
 caaacgcac aagatgcttc ggacgcgga tgccgtctga agcaccgttt ggatcaggca 180
 atgcagtgcc tccagttcga cagcatcaac ctcatcgaac acatcctgcc cgatgtccgc 240
 ttctggctgg ttcccccttc acgcaccac cacctgcacg aacatttcca ccacatttcc 300
 tggcagaccg aagccatccc gcaaaccgaa agcaagcccc acaaaccctg gtttgcactt 360
 ccacaaacat ccgaacggca aaaaccgga cacatcctcg ttatcggcgc gggcatatcc 420
 ggcgcgga cgcgccacgc cttagcatca cacggcattt ccggttaccgt attggaagcc 480

```

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ctcggacaca tcctgcccga atccgaaacc tggggcggca acggcatcat ccacctcaat 660
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gmcawtgcag cccaaatcst aggcytgccc catccctttt yacaacgcct gcgccacgcc 1560
ctacacccca accgcaccat catccgcgcc atcgtcagaa ggaaggatct aacccttaa 1620

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<210> 736

<211> 539

<212> PRT

<213> *Neisseria meningitidis*

<400> 736

```

Met Asp Asn Leu Val Trp Asp Gly Ile Pro Asp Ile Arg Thr Leu Asp
  1             5             10             15

```

```

Gln Ala Ile Arg Lys His Ala Pro Pro Leu Asn Leu Ile Ile Cys Leu
      20             25             30

```

```

Pro Asp Asn Gln Ile Pro Asp Phe Gln Thr Ala Gln Asp Ala Ser Asp
      35             40             45

```

```

Ala Glu Cys Arg Leu Lys His Arg Leu Asp Gln Ala Met Gln Cys Leu
      50             55             60

```

```

Gln Phe Asp Ser Ile Asn Leu Ile Glu His Ile Leu Pro Asp Val Arg
      65             70             75             80

```

```

Phe Trp Leu Val Pro Pro Ser Arg Thr His His Leu His Glu His Phe
      85             90             95

```

```

His His Ile Ser Trp Gln Thr Glu Ala Ile Pro Gln Thr Glu Ser Lys
      100            105            110

```

```

Pro Asp Lys Pro Trp Phe Ala Leu Pro Gln Thr Ser Glu Arg Gln Lys
      115            120            125

```

```

Pro Glu His Ile Leu Val Ile Gly Ala Gly Ile Ser Gly Ala Ala Thr
      130            135            140

```

```

Ala His Ala Leu Ala Ser His Gly Ile Ser Val Thr Val Leu Glu Ala
      145            150            155            160

```

Arg	Lys	Ala	Ala	Gln	Ala	Ala	Ser	Gly	Asn	Arg	Gln	Gly	Leu	Leu	Tyr	165	170	175	
Ala	Lys	Ile	Ser	Pro	His	Asp	Thr	Glu	Gln	Thr	Glu	Leu	Leu	Leu	Ala	180	185	190	
Gly	Tyr	Gly	Tyr	Thr	Lys	Arg	Leu	Leu	Gly	His	Ile	Leu	Pro	Glu	Ser	195	200	205	
Glu	Thr	Trp	Gly	Gly	Asn	Gly	Ile	Ile	His	Leu	Asn	Tyr	Ser	Arg	Thr	210	215	220	
Glu	Gln	Gln	Arg	Asn	His	Glu	Leu	Gly	Leu	Gln	Lys	His	His	Asn	His	225	230	235	240
Leu	Tyr	Arg	Ser	Ile	Thr	Ser	Ala	Glu	Ala	Glu	Lys	Ile	Ala	Gly	Ile	245	250	255	
Pro	Leu	Ser	Val	Pro	Tyr	Asp	His	Pro	Ser	Cys	Gly	Leu	Tyr	Trp	Gln	260	265	270	
His	Gly	Val	Trp	Leu	Asn	Pro	Pro	Ala	Phe	Val	Arg	Thr	Leu	Leu	Asn	275	280	285	
His	Pro	Leu	Ile	Gly	Leu	His	Glu	Asp	Thr	Pro	Leu	Thr	Asp	Ile	Ser	290	295	300	
His	Asp	Gly	Glu	Lys	Trp	Ile	Ala	Ser	Thr	Pro	Asn	Gly	Thr	Phe	Thr	305	310	315	320
Ala	Thr	His	Ile	Ile	Tyr	Cys	Thr	Gly	Ala	Asn	Ser	Pro	Tyr	Leu	Pro	325	330	335	
Glu	Thr	Asn	Leu	Ala	Ala	Leu	Pro	Leu	Arg	Gln	Ile	Arg	Gly	Gln	Thr	340	345	350	
Gly	Leu	Thr	Pro	Ser	Thr	Pro	Phe	Ser	Glu	Gln	Leu	Arg	Cys	Ala	Val	355	360	365	
Ser	Gly	Glu	Ser	Tyr	Ile	Ser	Pro	Ser	Trp	His	Gly	Leu	His	Cys	Tyr	370	375	380	
Gly	Ala	Ser	Phe	Ile	Pro	Asn	Ser	Ser	His	Thr	Gly	Trp	Asn	Glu	Ala	385	390	395	400
Glu	Glu	Ala	Ser	Asn	Arg	Gln	Ala	Leu	Ala	His	Leu	Asn	Pro	Ala	Leu	405	410	415	
Ser	Glu	Ser	Leu	Phe	Ala	Ala	Asn	Pro	Asn	Pro	Gln	Lys	His	Gln	Gly	420	425	430	
His	Ala	Ala	Ile	Arg	Cys	Asp	Ser	Pro	Asp	His	Leu	Pro	Leu	Val	Gly	435	440	445	
Ala	Leu	Gly	Asp	Ile	Ala	Ala	Met	Arg	Gln	Thr	Tyr	Thr	Lys	Leu	Ala	450	455	460	

Leu Asp Lys Asn Tyr Arg Ile Asp Thr Pro Cys Pro Tyr Leu Pro Asn
 465 470 475 480

Ala Tyr Val Asn Thr Ala His Gly Thr Arg Gly Leu Ala Thr Ala Pro
 485 490 495

Ile Cys Ala Ala Xaa Xaa Ala Ala Gln Ile Xaa Gly Leu Pro His Pro
 500 505 510

Phe Xaa Gln Arg Leu Arg His Ala Leu His Pro Asn Arg Thr Ile Ile
 515 520 525

Arg Ala Ile Val Arg Arg Lys Asp Leu Thr Pro
 530 535

<210> 737
 <211> 1620
 <212> DNA
 <213> Neisseria meningitidis

<400> 737
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 caaacgcac aagatgcttc ggacgcggaa tgccgtctga agcaccgttt ggatcaggca 180
 acccagtgcc tccagttcga cagcatcaac ctgattgaac acatcctgcc cgatgtccgc 240
 ttctggctgg ttcccccttc acgcacccgc cgctgcacg aacacttcca ccacatttcc 300
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 ccacaaacat ccgaacggca aaaaccggaa cacatcctcg ttatcggagc gggcatatcc 420
 ggcgcggcaa ccgcccacgc cttagcatca tacggcattt ccgttaccgt attggaagcc 480
 cgaaaagccg cccaagccgc cagcggcaac cgccaagggc tgctctacgc caaaatctcg 540
 ccgcacgaca ccgaacaaac cgaactgctg ctgcccggct acggctacac caaacgcctg 600
 ctccggacata tccctgcccga atccgaaacc tggggcggca acggcatcat ccacctcaat 660
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 ccctacgccg aaccattatg cggactgttt tggcagtacg gcgtatggct caatcctccc 840
 acattcgtcc gcgcctcctc cagccatccg ctcatggac tacacgaaga cacaccgtta 900
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 gccacacaca tcatctactg caccggtgcg aacagcccct acctaccga aaccaacctc 1020
 gccaccctgc ccctcaggca aatacgcgga caaacccggc tcacaccgtc caccctgttt 1080
 tccgaacaac tgcgttgccg cgtttcaggc gaaagctaca tcagcccgtc gtggcacgga 1140
 ctgcaactgct acggcgcgag ttttattccc aacagcagcc ataccggatg gaacgaagcc 1200
 gaagaagcct caaacgcga agcattggca caccttaacc ccgccctttc cgaatcattg 1260
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 gcctacgcca acaccgccc cggcacacgc gggcttgcca ccgcccccat ctgcgcccgc 1500
 gccgttgacg ccgaaatcct aggcctgccc catccccctc caaaacgcct gcgccacgcc 1560
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<210> 738
 <211> 539
 <212> PRT
 <213> Neisseria meningitidis

<400> 738

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Gln	Thr	Ile	Arg	Lys	His	Ala	His	Pro	Leu	Asn	Leu	Ile	Val	Cys	Leu	20	25	30	
Pro	Asp	Asn	Gln	Ile	Pro	Asn	Phe	Gln	Thr	Ala	Gln	Asp	Ala	Ser	Asp	35	40	45	
Ala	Glu	Cys	Arg	Leu	Lys	His	Arg	Leu	Asp	Gln	Ala	Thr	Gln	Cys	Leu	50	55	60	
Gln	Phe	Asp	Ser	Ile	Asn	Leu	Ile	Glu	His	Ile	Leu	Pro	Asp	Val	Arg	65	70	75	80
Phe	Trp	Leu	Val	Pro	Pro	Ser	Arg	Thr	Arg	Arg	Leu	His	Glu	His	Phe	85	90	95	
His	His	Ile	Ser	Trp	Gln	Thr	Glu	Ala	Ile	Pro	Gln	Thr	Glu	Ser	Lys	100	105	110	
Pro	Asp	Lys	Pro	Trp	Phe	Ala	Leu	Pro	Gln	Thr	Ser	Glu	Arg	Gln	Lys	115	120	125	
Pro	Glu	His	Ile	Leu	Val	Ile	Gly	Ala	Gly	Ile	Ser	Gly	Ala	Ala	Thr	130	135	140	
Ala	His	Ala	Leu	Ala	Ser	Tyr	Gly	Ile	Ser	Val	Thr	Val	Leu	Glu	Ala	145	150	155	160
Arg	Lys	Ala	Ala	Gln	Ala	Ala	Ser	Gly	Asn	Arg	Gln	Gly	Leu	Leu	Tyr	165	170	175	
Ala	Lys	Ile	Ser	Pro	His	Asp	Thr	Glu	Gln	Thr	Glu	Leu	Leu	Leu	Ala	180	185	190	
Gly	Tyr	Gly	Tyr	Thr	Lys	Arg	Leu	Leu	Gly	His	Ile	Leu	Pro	Glu	Ser	195	200	205	
Glu	Thr	Trp	Gly	Gly	Asn	Gly	Ile	Ile	His	Leu	Asn	Tyr	Ser	Arg	Thr	210	215	220	
Glu	Gln	Gln	Arg	Asn	His	Glu	Leu	Gly	Leu	Gln	Lys	His	His	Asn	His	225	230	235	240
Leu	Tyr	Arg	Ser	Ile	Thr	Gln	Ala	Glu	Ala	Glu	Lys	Ile	Ala	Gly	Ile	245	250	255	
Pro	Leu	Asn	Thr	Pro	Tyr	Ala	Glu	Pro	Leu	Cys	Gly	Leu	Phe	Trp	Gln	260	265	270	
Tyr	Gly	Val	Trp	Leu	Asn	Pro	Pro	Thr	Phe	Val	Arg	Ala	Leu	Leu	Ser	275	280	285	
His	Pro	Leu	Ile	Gly	Leu	His	Glu	Asp	Thr	Pro	Leu	Thr	Asp	Ile	Ser	290	295	300	

His Asp Gly Glu Lys Trp Ile Ala Ser Thr Pro Asn Gly Thr Phe Thr
 305 310 315 320
 Ala Thr His Ile Ile Tyr Cys Thr Gly Ala Asn Ser Pro Tyr Leu Pro
 325 330 335
 Glu Thr Asn Leu Ala Thr Leu Pro Leu Arg Gln Ile Arg Gly Gln Thr
 340 345 350
 Gly Leu Thr Pro Ser Thr Pro Phe Ser Glu Gln Leu Arg Cys Ala Val
 355 360 365
 Ser Gly Glu Ser Tyr Ile Ser Pro Ser Trp His Gly Leu His Cys Tyr
 370 375 380
 Gly Ala Ser Phe Ile Pro Asn Ser Ser His Thr Gly Trp Asn Glu Ala
 385 390 395 400
 Glu Glu Ala Ser Asn Arg Gln Ala Leu Ala His Leu Asn Pro Ala Leu
 405 410 415
 Ser Glu Ser Leu Phe Ala Ala Asn Pro Asn Pro Gln Lys His Gln Gly
 420 425 430
 His Ala Ala Ile Arg Cys Asp Ser Pro Asp His Leu Pro Leu Val Gly
 435 440 445
 Ala Leu Gly Asp Ile Ala Ala Met Gln Gln Thr Tyr Ala Lys Leu Ala
 450 455 460
 Leu Asp Lys Asn Tyr Arg Ile Asp Ala Pro Cys Pro Tyr Leu Pro Asn
 465 470 475 480
 Ala Tyr Ala Asn Thr Ala His Gly Thr Arg Gly Leu Ala Thr Ala Pro
 485 490 495
 Ile Cys Ala Ala Ala Val Ala Ala Glu Ile Leu Gly Leu Pro His Pro
 500 505 510
 Leu Ser Lys Arg Leu Arg His Ala Leu His Pro Asn Arg Ala Ile Ile
 515 520 525
 Arg Ala Ile Val Arg Arg Lys Asp Leu Thr Pro
 530 535

<210> 739
 <211> 606
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 739
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 gatcaagcca accaaaggac cacatttagc ggcaatgtca tcatcagaca gggtagctc 180
 aacatttccg cctcgtgtgt caacgtcaca cgcggcaggc aaaggcggcg aatccgtgag 240
 ggcggaaggt tcgcccgtcc gcttcagcca aacgttggac gggggcaaag ggacggtgcg 300

cggtcaggca aacaacgtta cctattcctc cgcaggaagc actgtcgttc tgaccggcaa 360
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 aaccgaagtc tataccatca acggcagcac gaaatcgggt gcgaaatccg cttccaaaac 480
 cggcagggtc agcgtcgtca tccagccttc aagcacacaa aaaaccgaat aaccccgatg 540
 ccgtctgaaa cggaaacgca gttcagacgg catttgccga ccgaaatgcc gagaagagat 600
 tattga 606

<210> 740

<211> 201

<212> PRT

<213> Neisseria gonorrhoeae

<400> 740

Met Ile Gln Lys Ile Cys Lys Leu Phe Val Leu Ile Val Ile Phe Ala
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Thr Ser Pro Ala Phe Ala Leu Gln Ser Asp Ser Arg Arg Pro Ile Gln
 20 25 30

Ile Glu Ala Asp Gln Gly Ser Leu Asp Gln Ala Asn Gln Arg Thr Thr
 35 40 45

Phe Ser Gly Asn Val Ile Ile Arg Gln Gly Thr Leu Asn Ile Ser Ala
 50 55 60

Ser Cys Val Asn Val Thr Arg Gly Arg Gln Arg Arg Arg Ile Arg Glu
 65 70 75 80

Gly Gly Arg Phe Ala Arg Pro Leu Gln Pro Asn Val Gly Arg Gly Gln
 85 90 95

Arg Asp Gly Ala Arg Ser Gly Lys Gln Arg Tyr Leu Phe Leu Arg Arg
 100 105 110

Lys His Cys Arg Ser Asp Arg Gln Cys Gln Ser Ala Ala Arg Arg Arg
 115 120 125

Arg Cys Arg Arg Cys Gly His Tyr Leu Gln His Gln Asn Arg Ser Leu
 130 135 140

Tyr His Gln Arg Gln His Glu Ile Gly Cys Glu Ile Arg Phe Gln Asn
 145 150 155 160

Arg Gln Gly Gln Arg Arg His Pro Ala Phe Lys His Thr Lys Asn Arg
 165 170 175

Ile Thr Pro Met Pro Ser Glu Thr Glu Thr Gln Phe Arg Arg His Leu
 180 185 190

Pro Thr Glu Met Pro Arg Arg Asp Tyr
 195 200

<210> 741

<211> 455

<212> DNA
<213> Neisseria meningitidis

<400> 741
atgatacaaa agatatgtaa gctatttggtt ttaatagcat ttttttcggc gtcccccgct 60
tttgcccttc aaagcgacag caggcagcct attcagattg aggccgacca aggttcgctc 120
gatcaagcca accaaagcac cacattcagc ggaaacgtcg tcatcagaca gggtagcgtc 180
aatatttccg ccgcccgcgt caatgttaça cgcggcggca aaggcggcga atccgtgagg 240
gcggaagggtt cgccagtccg cttcagccag acattggacg gcggcaaagg cacggtgcgc 300
ggacaggcaa acaacgttgc ttattcatct gcaggcagca ccgtagtctt aaccggtaat 360
gccaaagtac agcgcggcgg cgatgtcgcc gaagggtcgg tgattacata caacaccaa 420
accgaagtct ataccatcag cggcagcaca aaatt 455

<210> 742
<211> 151
<212> PRT
<213> Neisseria meningitidis

<400> 742
Met Ile Gln Lys Ile Cys Lys Leu Phe Val Leu Ile Ala Phe Phe Ser
1 5 10 15
Ala Ser Pro Ala Phe Ala Leu Gln Ser Asp Ser Arg Gln Pro Ile Gln
20 25 30
Ile Glu Ala Asp Gln Gly Ser Leu Asp Gln Ala Asn Gln Ser Thr Thr
35 40 45
Phe Ser Gly Asn Val Val Ile Arg Gln Gly Thr Leu Asn Ile Ser Ala
50 55 60
Ala Arg Val Asn Val Thr Arg Gly Arg Gln Arg Arg Arg Ile Arg Glu
65 70 75 80
Gly Gly Arg Phe Ala Ser Pro Leu Gln Pro Asp Ile Gly Arg Arg Gln
85 90 95
Arg His Gly Ala Arg Thr Gly Lys Gln Arg Cys Leu Phe Ile Cys Arg
100 105 110
Gln His Arg Ser Leu Asn Arg Cys Gln Ser Thr Ala Arg Arg Arg Cys
115 120 125
Arg Arg Arg Cys Gly Asp Tyr Ile Gln His Gln Asn Arg Ser Leu Tyr
130 135 140
His Gln Arg Gln His Lys Ile
145 150

<210> 743
<211> 605
<212> DNA
<213> Neisseria meningitidis

<400> 743

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atgatacaaa agatatgtaa gctatttggt ttaatagcat ttttttcggc gtcccccgct 60
tttgcccttc aaagcgacag caggcagcct attcagattg aggccgacca aggttcgctc 120
gatcaagcca accaaagcac cacattcagc ggaaacgtcg tcatcagaca gggtagcctc 180
aatatttccg ccgcccgcgt caatgttaca cgcggcggca aaggcggcga atccgtgagg 240
gcggaagggt cgccagtcg cttcagccag acattggacg gcggcaaagg cacggtgcgc 300
ggacaggcaa acaacgttgc ttattcatct gcaggcagca ccgtagtctt aaccggtaat 360
gccaaagtac agcgcggcgg cgatgtcgcc gaagggtgcg tgattacata caacacaaaa 420
accgaagtct ataccatcag cggcagcaca aaatccggcg caaaatccgc ttccaaatcc 480
ggcaggggtca gcgtcgttat ccagccttcg agtacgcaaa aatccgaata atcccaatgc 540
cgtctgaaac ataaacctgg ttcggacggc atttgccgac cgaaatattg aagagatatt 600
tatga                                         605

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<210> 744
 <211> 199
 <212> PRT
 <213> *Neisseria meningitidis*

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<400> 744
Met Ile Gln Lys Ile Cys Lys Leu Phe Val Leu Ile Ala Phe Phe Ser
  1             5             10             15

Ala Ser Pro Ala Phe Ala Leu Gln Ser Asp Ser Arg Gln Pro Ile Gln
      20             25             30

Ile Glu Ala Asp Gln Gly Ser Leu Asp Gln Ala Asn Gln Ser Thr Thr
      35             40             45

Phe Ser Gly Asn Val Val Ile Arg Gln Gly Thr Leu Asn Ile Ser Ala
      50             55             60

Ala Arg Val Asn Val Thr Arg Gly Xaa Gln Arg Arg Arg Ile Arg Glu
      65             70             75             80

Gly Gly Arg Phe Ala Ser Pro Leu Gln Pro Asp Ile Gly Arg Arg Gln
      85             90             95

Arg His Gly Ala Arg Thr Gly Lys Gln Arg Cys Leu Phe Ile Cys Arg
      100            105            110

Gln His Arg Ser Leu Asn Arg Cys Gln Ser Thr Ala Arg Arg Arg Cys
      115            120            125

Arg Arg Arg Cys Gly Asp Tyr Ile Gln His Gln Asn Arg Ser Leu Tyr
      130            135            140

His Gln Arg Gln His Lys Ile Arg Arg Lys Ile Arg Phe Gln Ile Arg
      145            150            155            160

Gln Gly Gln Arg Arg Tyr Pro Ala Phe Glu Tyr Ala Lys Ile Arg Ile
      165            170            175

Ile Pro Met Pro Ser Glu Thr Thr Trp Phe Gly Arg His Leu Pro Thr
      180            185            190

Glu Ile Leu Lys Arg Tyr Leu
      195

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<210> 745
 <211> 531
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 745
 atgatacaaa agatatgtaa gctatattgtt ttaattgtaa tttttgcaac ttctcccgct 60
 tttgcccttc aaagcgacag cagacggccc atccaaatcg aagccgacca aggttcgctc 120
 gatcaagcca accaaagtac cacatttagc ggcaatgtca tcatcagaca gggtagcgtc 180
 aacattttccg cctcgcgcgt caacgtcaca cgcggcggca aaggcggcga atccgtgagg 240
 gcggaaggtt cgcccgtccg cttcagccaa acgttggacg ggggcaaagg gacggtgcgc 300
 ggtcaggcaa acaacgttac ctattcctcc gcaggaagca ccgtcgttct gaccggcaat 360
 gccaaagtgc agcgcggcgg cgacgttgcc gaaggtgcgg tcattaccta caacaccaa 420
 accgaagtct ataccatcaa cggcagcacg aaatcgggtg cgaaatccgc ttccaaaacc 480
 ggcagggtca gcgtcgtcat ccagccttca agcacacaaa aaaccgaata a 531

<210> 746
 <211> 176
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 746
 Met Ile Gln Lys Ile Cys Lys Leu Phe Val Leu Ile Val Ile Phe Ala
 1 5 10 15
 Thr Ser Pro Ala Phe Ala Leu Gln Ser Asp Ser Arg Arg Pro Ile Gln
 20 25 30
 Ile Glu Ala Asp Gln Gly Ser Leu Asp Gln Ala Asn Gln Ser Thr Thr
 35 40 45
 Phe Ser Gly Asn Val Ile Ile Arg Gln Gly Thr Leu Asn Ile Ser Ala
 50 55 60
 Ser Arg Val Asn Val Thr Arg Gly Gly Lys Gly Gly Glu Ser Val Arg
 65 70 75 80
 Ala Glu Gly Ser Pro Val Arg Phe Ser Gln Thr Leu Asp Gly Gly Lys
 85 90 95
 Gly Thr Val Arg Gly Gln Ala Asn Asn Val Thr Tyr Ser Ser Ala Gly
 100 105 110
 Ser Thr Val Val Leu Thr Gly Asn Ala Lys Val Gln Arg Gly Gly Asp
 115 120 125
 Val Ala Glu Gly Ala Val Ile Thr Tyr Asn Thr Lys Thr Glu Val Tyr
 130 135 140
 Thr Ile Asn Gly Ser Thr Lys Ser Gly Ala Lys Ser Ala Ser Lys Thr
 145 150 155 160
 Gly Arg Val Ser Val Val Ile Gln Pro Ser Ser Thr Gln Lys Thr Glu
 165 170 175

<210> 747
 <211> 531
 <212> DNA
 <213> Neisseria meningitidis

<400> 747
 atgatacaaa agatatgtaa gctatttgtt ttaatagcat ttttttcggc gtcccccgct 60
 ttgccccttc aaagcgacag caggcagcct attcagattg aggccgacca aggttcgctc 120
 gatcaagcca accaaagcac cacattcagc ggaaacgtcg tcatcagaca gggtagcgtc 180
 aatatttccg ccgcccgcgt caatgttaca cgcggcggca aaggcggcga atccgtgagg 240
 gcggaagggtt cgccagtcct cttcagccag acattggacg gcggcaaagg cacggtgcgc 300
 ggacaggcaa acaacgttgc ttattcatct gcaggcagca ccgtagtctt aaccggtaat 360
 gccaaagtac agcgcggcgg cgatgtcgcc gaagggtgcg tgattacata caacaccaaa 420
 accgaagtct ataccatcag cggcagcaca aaatccggcg caaaatccgc ttccaaatcc 480
 ggcagggtca gcgtcgttat ccagccttcg agtacgcaaa aatccgaata a 531

<210> 748
 <211> 176
 <212> PRT
 <213> Neisseria meningitidis

<400> 748
 Met Ile Gln Lys Ile Cys Lys Leu Phe Val Leu Ile Ala Phe Phe Ser
 1 5 10 15
 Ala Ser Pro Ala Phe Ala Leu Gln Ser Asp Ser Arg Gln Pro Ile Gln
 20 25 30
 Ile Glu Ala Asp Gln Gly Ser Leu Asp Gln Ala Asn Gln Ser Thr Thr
 35 40 45
 Phe Ser Gly Asn Val Val Ile Arg Gln Gly Thr Leu Asn Ile Ser Ala
 50 55 60
 Ala Arg Val Asn Val Thr Arg Gly Gly Lys Gly Glu Ser Val Arg
 65 70 75 80
 Ala Glu Gly Ser Pro Val Arg Phe Ser Gln Thr Leu Asp Gly Gly Lys
 85 90 95
 Gly Thr Val Arg Gly Gln Ala Asn Asn Val Ala Tyr Ser Ser Ala Gly
 100 105 110
 Ser Thr Val Val Leu Thr Gly Asn Ala Lys Val Gln Arg Gly Gly Asp
 115 120 125
 Val Ala Glu Gly Ala Val Ile Thr Tyr Asn Thr Lys Thr Glu Val Tyr
 130 135 140
 Thr Ile Ser Gly Ser Thr Lys Ser Gly Ala Lys Ser Ala Ser Lys Ser
 145 150 155 160

Gly Arg Val Ser Val Val Ile Gln Pro Ser Ser Thr Gln Lys Ser Glu
165 170 175

<210> 749
<211> 531
<212> DNA
<213> Neisseria meningitidis

<400> 749
atgatacaaaa agatatgtaa gctattttgtt ttaatagcat ttttttcggc gtcccccgcgt 60
tttgcccttc aaagcgacag caggcagcct attcagattg aggccgacca aggttcgctc 120
gatcaagcca accaaaagcac cacattcagc ggaaacgtcg tcatcagaca gggtagcgtc 180
aatattttccg ccgcccgcgt caatgttaca cgcggcggca aaggcggcga atccgtgagg 240
gcggaagggtt cgccagtccg cttcagccag acattggacg gcggcaaagg cacggtgcgc 300
ggacaggcaa acaacgttgc ttattcatct gcaggcagca ccgtagtctt aaccggtaat 360
gccaaagtac agcgcggcgg cgatgtcgcc gaaggtgcgg tgattacata caacacccaaa 420
accgaagtct ataccatcag cggcagcaca aaatccggcg caaaatccgc ttccaaatcc 480
ggcaggggtca gcgtcggttat ccagccttcg agtacgcaaa aatccgaata a 531

<210> 750
<211> 176
<212> PRT
<213> Neisseria meningitidis

<400> 750
Met Ile Gln Lys Ile Cys Lys Leu Phe Val Leu Ile Ala Phe Phe Ser
1 5 10 15
Ala Ser Pro Ala Phe Ala Leu Gln Ser Asp Ser Arg Gln Pro Ile Gln
20 25 30
Ile Glu Ala Asp Gln Gly Ser Leu Asp Gln Ala Asn Gln Ser Thr Thr
35 40 45
Phe Ser Gly Asn Val Val Ile Arg Gln Gly Thr Leu Asn Ile Ser Ala
50 55 60
Ala Arg Val Asn Val Thr Arg Gly Gly Lys Gly Gly Glu Ser Val Arg
65 70 75 80
Ala Glu Gly Ser Pro Val Arg Phe Ser Gln Thr Leu Asp Gly Gly Lys
85 90 95
Gly Thr Val Arg Gly Gln Ala Asn Asn Val Ala Tyr Ser Ser Ala Gly
100 105 110
Ser Thr Val Val Leu Thr Gly Asn Ala Lys Val Gln Arg Gly Gly Asp
115 120 125
Val Ala Glu Gly Ala Val Ile Thr Tyr Asn Thr Lys Thr Glu Val Tyr

130

135

140

Thr Ile Ser Gly Ser Thr Lys Ser Gly Ala Lys Ser Ala Ser Lys Ser
 145 150 155 160

Gly Arg Val Ser Val Val Ile Gln Pro Ser Ser Thr Gln Lys Ser Glu
 165 170 175

<210> 751

<211> 582

<212> DNA

<213> Neisseria gonorrhoeae

<400> 751

atgaaagtaa gatggcggta cggaattgcg ttcccattga tattggcgggt tgccttgggc 60
 agcctgtcgg catggttggg ccgtatcagc gaagtcgaaa tcgaggaagt caggctcaat 120
 cccgacgaac ctcaatacac aatggacggc ttggacggaa ggcggtttga cgaacaggga 180
 tacttgaaag aacatttgag cgcgaaagggt gcgaaacagt ttcccgaaaa cagcgacatc 240
 cattttgatt cgccgcattc cgtgttcttc caagaaggca ggctgttgta cgaagtcggc 300
 agcgatgaag ccgtttacca taccgaaaac aaacagggttc tttttaaaaa caacgttgtg 360
 ctgaccaaaa ccgccgacgg caggcggcgag gcgggttaaag tcgaaaccga aaaactgcac 420
 gtcgataccg aatctcaata tgcccaaacc gatacgctg tcagtttcca atatggcgcg 480
 tcgcacgggtc aggcggggcg tatgacctac aaccacaaaa caggcatgtt gaacttctca 540
 tctaaagtga aagccgcgat ttatgataca aaagatatgt aa 582

<210> 752

<211> 193

<212> PRT

<213> Neisseria gonorrhoeae

<400> 752

Met Lys Val Arg Trp Arg Tyr Gly Ile Ala Phe Pro Leu Ile Leu Ala
 1 5 10 15

Val Ala Leu Gly Ser Leu Ser Ala Trp Leu Gly Arg Ile Ser Glu Val
 20 25 30

Glu Ile Glu Glu Val Arg Leu Asn Pro Asp Glu Pro Gln Tyr Thr Met
 35 40 45

Asp Gly Leu Asp Gly Arg Arg Phe Asp Glu Gln Gly Tyr Leu Lys Glu
 50 55 60

His Leu Ser Ala Lys Gly Ala Lys Gln Phe Pro Glu Asn Ser Asp Ile
 65 70 75 80

His Phe Asp Ser Pro His Leu Val Phe Phe Gln Glu Gly Arg Leu Leu
 85 90 95

Tyr Glu Val Gly Ser Asp Glu Ala Val Tyr His Thr Glu Asn Lys Gln
 100 105 110

Val Leu Phe Lys Asn Asn Val Val Leu Thr Lys Thr Ala Asp Gly Arg
 115 120 125

Arg Gln Ala Gly Lys Val Glu Thr Glu Lys Leu His Val Asp Thr Glu
 130 135 140

Ser Gln Tyr Ala Gln Thr Asp Thr Pro Val Ser Phe Gln Tyr Gly Ala
 145 150 155 160

Ser His Gly Gln Ala Gly Gly Met Thr Tyr Asn His Lys Thr Gly Met
 165 170 175

Leu Asn Phe Ser Ser Lys Val Lys Ala Ala Ile Tyr Asp Thr Lys Asp
 180 185 190

Met

<210> 753
 <211> 521
 <212> DNA
 <213> Neisseria meningitidis

<400> 753
 agcctgtcgg catggttggg tcgtatcagc gaagtcgaga ttgaagaagt caggctcaat 60
 cccgacgaac cgcaatacac aatggacagc ttggacggca ggcggtttga cgaacaggga 120
 tacttgaaag aacatttgag cgcgaagggc gcgaaacagt ttccggaaag cagcgacatc 180
 cattttgatt cgccgcatct cgtgttcttc caagaaggca ggttggtgta cgaagtcggc 240
 agcgacgaag ccggtttacca taccgaaaac aaacagggttc tttttaaaaa caacggttg 300
 ctgacaaaaa ccgccgacgg caaacggcag gcgggttaaag ttgaagccga aaagctgcac 360
 gtcgataccg aatctcaata tgcccaaacc gatacgcttg cagtttccaa tatggtgcat 420
 cgcacgggtca ggcggggcggc atgacttacg accacawwac aggcatgttg aacttctcat 480
 ctaaagtgaag agccacgatt tatgatacaa aagatatgta a 521

<210> 754
 <211> 173
 <212> PRT
 <213> Neisseria meningitidis

<400> 754
 Ser Leu Ser Ala Trp Leu Gly Arg Ile Ser Glu Val Glu Ile Glu Glu
 1 5 10 15
 Val Arg Leu Asn Pro Asp Glu Pro Gln Tyr Thr Met Asp Ser Leu Asp
 20 25 30
 Gly Arg Arg Phe Asp Glu Gln Gly Tyr Leu Lys Glu His Leu Ser Ala
 35 40 45
 Lys Gly Ala Lys Gln Phe Pro Glu Ser Ser Asp Ile His Phe Asp Ser
 50 55 60
 Pro His Leu Val Phe Phe Gln Glu Gly Arg Leu Leu Tyr Glu Val Gly
 65 70 75 80

Ser Asp Glu Ala Val Tyr His Thr Glu Asn Lys Gln Val Leu Phe Lys
 85 90 95
 Asn Asn Val Val Leu Thr Lys Thr Ala Asp Gly Lys Arg Gln Ala Gly
 100 105 110
 Lys Val Glu Ala Glu Lys Leu His Val Asp Thr Glu Ser Gln Tyr Ala
 115 120 125
 Gln Thr Asp Thr Pro Val Ser Phe Gln Tyr Gly Ala Ser His Gly Gln
 130 135 140
 Ala Gly Gly Met Thr Tyr Asp His Xaa Thr Gly Met Leu Asn Phe Ser
 145 150 155 160
 Ser Lys Val Lys Ala Thr Ile Tyr Asp Thr Lys Asp Met
 165 170

<210> 755
 <211> 582
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 755
 atgaaagtaa gatggcggta cggaattgcg ttcccatga tattggcgggt tgccttgggc 60
 agcctgtcgg catggttggg acgcatcagc gaagtcgaga ttgaagaagt caggctcaat 120
 cccgacgaac cgcaatacac aatggacgga ttggatggca ggcggtttga cgaacaggga 180
 tacttgaaag aacatttgag ttcgaagggc gcgaaacagt ttcccgaag cagcgacatt 240
 catttcgact caccgcatct cgtgttcttc caagaaggca ggttggtgta cgaagtcggc 300
 agcgatgaag ccgtttacca taccgaaaac aaacagggtc tttttaaaaa caacgttgtg 360
 ctgacaaaaa ccgccgacgg caaacggcag gcgggtaaaag ttgaagccga aaagctgcac 420
 gtcgataccg aatctcaata tgcccaaacc gatacgccctg tcagtttcca atatggtgca 480
 tcgcacggtc aggcgggcgg catgacttac gaccacaaaa caggcatggt gaacttctca 540
 tctaaagtga aagccacgat ttatgatata aaagatatgt aa 582

<210> 756
 <211> 193
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 756
 Met Lys Val Arg Trp Arg Tyr Gly Ile Ala Phe Pro Leu Ile Leu Ala
 1 5 10 15
 Val Ala Leu Gly Ser Leu Ser Ala Trp Leu Gly Arg Ile Ser Glu Val
 20 25 30
 Glu Ile Glu Glu Val Arg Leu Asn Pro Asp Glu Pro Gln Tyr Thr Met
 35 40 45
 Asp Gly Leu Asp Gly Arg Arg Phe Asp Glu Gln Gly Tyr Leu Lys Glu
 50 55 60
 His Leu Ser Ser Lys Gly Ala Lys Gln Phe Pro Glu Ser Ser Asp Ile

65		70		75		80
His Phe Asp Ser Pro His Leu Val Phe Phe Gln Glu Gly Arg Leu Leu						
	85		90		95	
Tyr Glu Val Gly Ser Asp Glu Ala Val Tyr His Thr Glu Asn Lys Gln						
	100		105		110	
Val Leu Phe Lys Asn Asn Val Val Leu Thr Lys Thr Ala Asp Gly Lys						
	115		120		125	
Arg Gln Ala Gly Lys Val Glu Ala Glu Lys Leu His Val Asp Thr Glu						
	130		135		140	
Ser Gln Tyr Ala Gln Thr Asp Thr Pro Val Ser Phe Gln Tyr Gly Ala						
145		150		155		160
Ser His Gly Gln Ala Gly Gly Met Thr Tyr Asp His Lys Thr Gly Met						
	165		170		175	
Leu Asn Phe Ser Ser Lys Val Lys Ala Thr Ile Tyr Asp Thr Lys Asp						
	180		185		190	

Met

<210> 757
 <211> 468
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 757
 atgatatcga tttcgagctc ggtacccagc gacgaaatca ccgccatcat ccccgcactc 60
 aaacgcaaag acattaccct cgtctgcac accgcccgcc ccgattcaac catggcgogc 120
 catgccgata tccacatcac cgcacgggtt tcgcaagaag cctgcccgtt ggggcttgcc 180
 ccgaccacca gcaccaccgc cggttatggct ttgggcgacg cgttggcggt cgtcctgctg 240
 cgcgcccgcg cgttcacgcc cgacgacttc gccttgatcc accctgccgg cagcctcggc 300
 aaacgcctgc ttttgcgctg tgccgacatt atgcacaaag gcggcggcct gcccgccgctc 360
 cgactcggca cgccttgaa aggagccatc gtcagcatga gcgagaaagg tttgggcatg 420
 tgggcgggaa cggacgggca aaggctgtct gaaaggcctt tttactga 468

<210> 758
 <211> 155
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 758
 Met Ile Ser Ile Ser Ser Ser Val Pro Ser Asp Glu Ile Thr Ala Ile
 1 5 10 15
 Ile Pro Ala Leu Lys Arg Lys Asp Ile Thr Leu Val Cys Ile Thr Ala
 20 25 30
 Arg Pro Asp Ser Thr Met Ala Arg His Ala Asp Ile His Ile Thr Ala

35	40	45
Ser Val Ser Gln Glu Ala Cys Pro Leu Gly Leu Ala Pro Thr Thr Ser		
50	55	60
Thr Thr Ala Val Met Ala Leu Gly Asp Ala Leu Ala Val Val Leu Leu		
65	70	75
Arg Ala Arg Ala Phe Thr Pro Asp Asp Phe Ala Leu Ile His Pro Ala		
	85	90
Gly Ser Leu Gly Lys Arg Leu Leu Leu Arg Val Ala Asp Ile Met His		
	100	105
Lys Gly Gly Gly Leu Pro Ala Val Arg Leu Gly Thr Pro Leu Lys Gly		
	115	120
Ala Ile Val Ser Met Ser Glu Lys Gly Leu Gly Met Trp Ala Gly Thr		
	130	135
Asp Gly Gln Arg Leu Ser Glu Arg Pro Phe Tyr		
145	150	155

<210> 759
 <211> 981
 <212> DNA
 <213> Neisseria meningitidis

<400> 759
 atggcaatgg cagaaaacgg aaaatatctc gactgggcac gcgaagtgtt gcacgccgaa 60
 gcggaaggct tgcgcgaaat tgcagcggaa ttgsacaaaa acttcgtcct tgcggcagac 120
 gcgttggtgc actgcaaggg cagggtcgtt atcacgggca tgggtcaagtc gggacatatc 180

gggcgcaaaa tggcggcaac tatggcctcg accggcacgc ctgcgttttt cgtccaccct 240
 gcggaagcgg cacacggcga tttgggtatg attgtggaca rcgacgtggc cgtcgcgatt 300
 tccaattccg gcgaaagcga cgaaatcgcc gccatcatcc ccgcactcaa acgcaaagac 360
 atcacgcttg tctgcatcac cgcccgcgcc gattcaacca tggcgcgcga tgccgacatc 420
 cacatcacgg cgtcggtttc caaagaagcc tgcccgcctg ggcttgcccc gaccaccagc 480
 accaccgccg tcatggcttt gggcgatgcg ttggcggctg tcctgctgcg cgcacgcgcg 540
 ttcacgcccg acgatttcgc cttgagccat cctgccggca gcctcggcaa acgcctactt 600
 ttgcgcgttg ccgacattat gcacaaaagg gcgcgcctgc ctgccgtccg actcggcacg 660
 cccttgaaaag aagccatcgt cagcatgagt gaaaaagggc tgggcatgtt ggcggtaacg 720
 gacgggcaag gccgtctgaa aggcgtattc accgacggcg atttgcgccg cctgtttcaa 780
 gaatgcgaca attttaccgg tctttcgata gacgaagtca tgcatacgca tcctaaaacc 840
 atctccgccg aacgtctcgc caccgaagcc ctgaaagtca tgcaggcaaa ccatgtgaac 900
 gggcttctgg ttaccgatgc agatggcgtg ctgatcggcg cgctgaatat gcacgacctg 960
 ctggcggcac ggattgtata g 981

<210> 760
 <211> 326
 <212> PRT
 <213> Neisseria meningitidis

<400> 760
 Met Ala Met Ala Glu Asn Gly Lys Tyr Leu Asp Trp Ala Arg Glu Val

1	5	10	15
Leu His Ala Glu Ala Glu Gly Leu Arg Glu Ile Ala Ala Glu Leu Xaa	20	25	30
Lys Asn Phe Val Leu Ala Ala Asp Ala Leu Leu His Cys Lys Gly Arg	35	40	45
Val Val Ile Thr Gly Met Val Lys Ser Gly His Ile Gly Arg Lys Met	50	55	60
Ala Ala Thr Met Ala Ser Thr Gly Thr Pro Ala Phe Phe Val His Pro	65	70	75
Ala Glu Ala Ala His Gly Asp Leu Gly Met Ile Val Asp Xaa Asp Val	85	90	95
Val Val Ala Ile Ser Asn Ser Gly Glu Ser Asp Glu Ile Ala Ala Ile	100	105	110
Ile Pro Ala Leu Lys Arg Lys Asp Ile Thr Leu Val Cys Ile Thr Ala	115	120	125
Arg Pro Asp Ser Thr Met Ala Arg His Ala Asp Ile His Ile Thr Ala	130	135	140
Ser Val Ser Lys Glu Ala Cys Pro Leu Gly Leu Ala Pro Thr Thr Ser	145	150	155
Thr Thr Ala Val Met Ala Leu Gly Asp Ala Leu Ala Val Val Leu Leu	165	170	175
Arg Ala Arg Ala Phe Thr Pro Asp Asp Phe Ala Leu Ser His Pro Ala	180	185	190
Gly Ser Leu Gly Lys Arg Leu Leu Leu Arg Val Ala Asp Ile Met His	195	200	205
Lys Gly Gly Gly Leu Pro Ala Val Arg Leu Gly Thr Pro Leu Lys Glu	210	215	220
Ala Ile Val Ser Met Ser Glu Lys Gly Leu Gly Met Leu Ala Val Thr	225	230	235
Asp Gly Gln Gly Arg Leu Lys Gly Val Phe Thr Asp Gly Asp Leu Arg	245	250	255
Arg Leu Phe Gln Glu Cys Asp Asn Phe Thr Gly Leu Ser Ile Asp Glu	260	265	270
Val Met His Thr His Pro Lys Thr Ile Ser Ala Glu Arg Leu Ala Thr	275	280	285
Glu Ala Leu Lys Val Met Gln Ala Asn His Val Asn Gly Leu Leu Val	290	295	300
Thr Asp Ala Asp Gly Val Leu Ile Gly Ala Leu Asn Met His Asp Leu			

305

310

315

320

Leu Ala Ala Arg Ile Val
325

<210> 761

<211> 981

<212> DNA

<213> Neisseria meningitidis

<400> 761

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atggcgatgg caggaaacga aaaatatctt gattgggcac gcgaagtgtt gcacaccgaa 60
gcggaaggct tgcgcgaaat tgcggcggat ttggacgaaa acttcgccct tgcggcggac 120
gcgttggtgc actgcaaagg cagggtcgtt atcacgggca tgggcaagtc gggacatatc 180
ggcgcaaaa tggcggcaac catggcctcg accggcacgc ccgcgttttt cgtccaccct 240
ggcgaagcgg cacacggcga tttgggcatg attgtggaca acgacgtggt cgtcgcgatt 300
tccaattccg gtgaaagcga cgaaatcgcc gccatcatcc ccgcgtcaa acgcaaagat 360
atcacgcttg tctgcatcac cgcccgcgcc gattcaacca tggcgcgccca tgccgacatc 420
cacatcacgg cgtcggtttc caaagaagcc tgcccgtggt ggcttgcccc gaccaccagc 480
accaccgccg ttatggcttt gggcgatgcg ttggcggttg tctgtctgcg cggccgcgcg 540
ttcacgcccg acgacttcgc cttgagccac cctgcgggca gcctcggcaa acgcctactt 600
ttgcgcgttg ccgacattat gcacaaaggc ggcggcctgc ctgccgtccg actcggcacg 660

cccttgaaaag aagccatcgt cagcatgagt gaaaaagggc tgggcatgtt ggcggtaacg 720
gacgggcaag gccgtctgaa aggcgtattc accgacggcg atttgccgcg cctgtttcaa 780
gaatgcgaca attttaccgg tctttcgata gacgaagtca tgcatacgca tcctaaaacc 840
atctccgccg aacgtctcgc caccgaagcc ctgaaagtca tgcaggcaaa ccattgtgaac 900
gggcttctgg ttaccgatgc agatggcgtg ctgatcggcg cgctgaatat gcacgacctt 960
ttggcggcgc ggattgtata g                                     981

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<210> 762

<211> 326

<212> PRT

<213> Neisseria meningitidis

<400> 762

Met Ala Met Ala Gly Asn Glu Lys Tyr Leu Asp Trp Ala Arg Glu Val
1 5 10 15

Leu His Thr Glu Ala Glu Gly Leu Arg Glu Ile Ala Ala Asp Leu Asp
20 25 30

Glu Asn Phe Ala Leu Ala Ala Asp Ala Leu Leu His Cys Lys Gly Arg
35 40 45

Val Val Ile Thr Gly Met Gly Lys Ser Gly His Ile Gly Arg Lys Met
50 55 60

Ala Ala Thr Met Ala Ser Thr Gly Thr Pro Ala Phe Phe Val His Pro
65 70 75 80

Ala Glu Ala Ala His Gly Asp Leu Gly Met Ile Val Asp Asn Asp Val
85 90 95

Val Val Ala Ile Ser Asn Ser Gly Glu Ser Asp Glu Ile Ala Ala Ile

100										105					110				
Ile	Pro	Ala	Leu	Lys	Arg	Lys	Asp	Ile	Thr	Leu	Val	Cys	Ile	Thr	Ala				
		115					120					125							
Arg	Pro	Asp	Ser	Thr	Met	Ala	Arg	His	Ala	Asp	Ile	His	Ile	Thr	Ala				
		130					135				140								
Ser	Val	Ser	Lys	Glu	Ala	Cys	Pro	Leu	Gly	Leu	Ala	Pro	Thr	Thr	Ser				
		145				150				155					160				
Thr	Thr	Ala	Val	Met	Ala	Leu	Gly	Asp	Ala	Leu	Ala	Val	Val	Leu	Leu				
				165				170						175					
Arg	Ala	Arg	Ala	Phe	Thr	Pro	Asp	Asp	Phe	Ala	Leu	Ser	His	Pro	Ala				
			180					185					190						
Gly	Ser	Leu	Gly	Lys	Arg	Leu	Leu	Leu	Arg	Val	Ala	Asp	Ile	Met	His				
		195					200					205							
Lys	Gly	Gly	Gly	Leu	Pro	Ala	Val	Arg	Leu	Gly	Thr	Pro	Leu	Lys	Glu				
		210				215					220								
Ala	Ile	Val	Ser	Met	Ser	Glu	Lys	Gly	Leu	Gly	Met	Leu	Ala	Val	Thr				
		225				230				235					240				
Asp	Gly	Gln	Gly	Arg	Leu	Lys	Gly	Val	Phe	Thr	Asp	Gly	Asp	Leu	Arg				
				245				250						255					
Arg	Leu	Phe	Gln	Glu	Cys	Asp	Asn	Phe	Thr	Gly	Leu	Ser	Ile	Asp	Glu				
		260						265					270						
Val	Met	His	Thr	His	Pro	Lys	Thr	Ile	Ser	Ala	Glu	Arg	Leu	Ala	Thr				
		275					280					285							
Glu	Ala	Leu	Lys	Val	Met	Gln	Ala	Asn	His	Val	Asn	Gly	Leu	Leu	Val				
		290				295					300								
Thr	Asp	Ala	Asp	Gly	Val	Leu	Ile	Gly	Ala	Leu	Asn	Met	His	Asp	Leu				
		305			310				315					320					
Leu	Ala	Ala	Arg	Ile	Val														
				325															

<210> 763

<211> 681

<212> DNA

<213> Neisseria gonorrhoeae

<400> 763

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atggcgggatg acggtttgtt gcggaactg tccgaaaaac ccagccaaag tgctctcttc 60
ctgccatttg acccattcgt tttcgagggt ttggactgcc ttttggatcat cgggcccgcc 120
ttgaaacaat gtttcaagca aatcccggca acgcgccacc cattcgccga ccgtcgcagg 180
ttgccgccat atccgggcaa tatccgacag ggtttcgagg aaggcggcaa aacgtccgaa 240
catggcggtt tgattcacgt cggcatacca cgcgctgaca tcctgccaca tcgggttgcc 300
gccttcgggc agcatccagc ccaatatcat acggtctgcc gcctgcttcc aggtaaacag 360

```

```

ctgatccgtg cgcgcgcgca tttctccgtc caatcccca tggacgttca aatcggcaac 420
catatcgtgc aaaagcggca aatcgtcccc ggtcagtcgc aaacggcgca acacggggcg 480
ggtttccaaa agcgcgagca ctttgccgac ttcaaaacgg ctttccagca agtcggacac 540
gcactccaac gcataaaaaa acgggttgccg gcgggtgatt ttcacgtccg aaacggaata 600
cggcaatgcc tgcgcgcggg gttgcgcctg tccgaacacg gcttcataa aaggcgata 660
gggttcgata ttcggggtta a 681

```

<210> 764

<211> 226

<212> PRT

<213> Neisseria gonorrhoeae

<400> 764

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Met Ala Asp Asp Gly Leu Leu Arg Gln Leu Ser Glu Lys Pro Ser Gln
  1          5          10          15

Ser Ala Leu Phe Leu Pro Phe Asp Pro Phe Val Phe Glu Val Leu Asp
      20          25          30

Cys Leu Leu Val Ile Gly Pro Gly Leu Lys Gln Cys Phe Lys Gln Ile
      35          40          45

Pro Ala Thr Arg His Pro Phe Ala Asp Arg Arg Arg Leu Pro Pro Tyr
      50          55          60

Pro Gly Asn Ile Arg Gln Gly Phe Glu Glu Gly Gly Lys Thr Ser Glu
      65          70          75          80

His Gly Gly Leu Ile His Val Gly Ile Pro Arg Ala Asp Ile Leu Pro
      85          90          95

His Arg Val Ala Ala Phe Gly Gln His Pro Ala Gln Tyr His Thr Val
      100          105          110

Cys Arg Leu Leu Pro Gly Lys Gln Leu Ile Arg Ala Ala Ala His Phe
      115          120          125

Ser Val Gln Ser Pro Met Asp Val Gln Ile Gly Asn His Ile Val Gln
      130          135          140

Lys Arg Gln Ile Val Pro Gly Gln Ser Glu Thr Ala Gln His Gly Arg
      145          150          155          160

Gly Phe Gln Lys Arg Glu His Phe Ala Asp Phe Lys Thr Ala Phe Gln
      165          170          175

Gln Val Gly His Ala Leu Gln Arg Ile Lys Lys Arg Leu Pro Ala Ala
      180          185          190

Asp Phe His Val Arg Asn Gly Ile Arg Gln Cys Leu Arg Ala Gly Leu
      195          200          205

Arg Leu Ser Glu His Gly Phe His Lys Arg Arg Ile Gly Phe Asp Ile
      210          215          220

```

Arg Gly
225

<210> 765
<211> 681
<212> DNA
<213> Neisseria meningitidis

<400> 765
atggcggatg acggtgtgcg gcggcaactg tccggaaaat tgcgccaatt cggtttccgc 60
ctrccatttg acccattcgt tttcaagggt ttggactgac ttttggtcat cggcttcagc 120
ttggaacaat gtttcaagca aatcccggca acgcgccacc cattcgccga ccgttgcggg 180
ctgccgccat atccgtacaa tatccgtcag ggtttcgagg aaggcggcaa aacgtccgaa 240
catggcggtt tgattcacgt cggcatacca cgcgctgaca tcctgccaca tcggattgcc 300

gcctttgggc agcatccagc ccaatatcat gcgttctacc gcctgcttcc aggtgaacag 360
ctgatacgtg ccgcgcgcga tttctcgtc caaaccccag tggacgttca aatcggcaac 420
catgtcgtgc aaaagcggta aatcgtcctc agtcagtccg aaacggcgca acacgggcgc 480
ggtttctaaa agcacaagca ctttatcgac ttcaaatacg ctttccaaca agtcgaacag 540
gcatgacaaa gcatgaaaca gcggttggcg gcggctgatt ttcacgtctg acacggaata 600
cggcaatgcc tgcgcaccgg gctgcgcctg tccgaacacg gcttcgataa aaggcgata 660
ggattcgata ttcgggggta a 681

<210> 766
<211> 226
<212> PRT
<213> Neisseria meningitidis

<400> 766
Met Ala Asp Asp Gly Val Arg Arg Gln Leu Ser Gly Lys Leu Arg Gln
1 5 10 15

Phe Gly Phe Arg Leu Pro Phe Asp Pro Phe Val Phe Lys Val Leu Asp
20 25 30

Xaa Leu Leu Val Ile Gly Phe Ser Leu Glu Gln Cys Phe Lys Gln Ile
35 40 45

Pro Ala Thr Arg His Pro Phe Ala Asp Arg Cys Gly Leu Pro Pro Tyr
50 55 60

Pro Tyr Asn Ile Arg Gln Gly Phe Glu Glu Gly Gly Lys Thr Ser Glu
65 70 75 80

His Gly Gly Leu Ile His Val Gly Ile Pro Arg Ala Asp Ile Leu Pro
85 90 95

His Arg Ile Ala Ala Phe Gly Gln His Pro Ala Gln Tyr His Ala Phe
100 105 110

Tyr Arg Leu Leu Pro Gly Glu Gln Leu Ile Arg Ala Ala Ala His Phe
115 120 125

Ser Val Gln Thr Pro Val Asp Val Gln Ile Gly Asn His Val Val Gln
130 135 140

Lys Arg Xaa Ile Val Leu Ser Gln Ser Glu Thr Ala Gln His Gly Arg
 145 150 155 160
 Gly Phe Xaa Lys His Lys His Phe Ile Asp Phe Lys Ser Ala Phe Gln
 165 170 175
 Gln Val Glu Gln Ala Xaa Gln Ser Met Lys Gln Arg Leu Ala Ala Ala
 180 185 190
 Asp Phe His Val Xaa His Gly Ile Arg Gln Cys Leu Arg Thr Gly Leu
 195 200 205
 Arg Leu Ser Glu His Gly Phe Asp Lys Arg Arg Ile Gly Phe Asp Ile
 210 215 220
 Arg Gly
 225

<210> 767
 <211> 681
 <212> DNA
 <213> Neisseria meningitidis

<400> 767
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 ctgccatttg acccattcgt tttcgaggct ttggactgcc ttttggtcat cgccttcgac 120
 ttggaacaat gtttcaagca aatcccggca acgcgccacc cattcgtcaa ccgtcgcagg 180
 ttgccgccat atccgtacaa tatccgtcag ggtttcgagg aaggcggcaa aacgtccgaa 240
 cagggcgggt tggttcacgt cggcatacca cgcgctgacc ccctgccaca tcggattgcc 300
 gccttcgggc agcatccagc ccaatatcat gcgttctacc gcctgcttcc aggtgaacag 360
 ctgatccgtg ccgcccgcga tttctccgtc caaaccacag cggacgttca aatcggcaac 420
 catgtcgtgc aaaagcggca aatcgtcctc agtcagtcog aaatggcgca acacgggcgc 480
 ggttttctaaa agcacaagca ctttatcgac ttcaaatacg ctttccaaca agtcgaacag 540
 gcatgacaaa gcatgaaaca gcggttgctg gcggctgatt ttcacatccg aaacggaata 600
 cggcaatgcc tgcgcgccg gctgcgcctg tccgaacacg gcttcgataa aaggcgtata 660
 ggattcgata ttcgggtta a 681

<210> 768
 <211> 224
 <212> PRT
 <213> Neisseria meningitidis

<400> 768
 Val Ala Asp Asp Gly Val Gln Arg Gln Leu Ser Gly Lys Leu Arg Gln
 1 5 10 15
 Phe Gly Phe Arg Leu Pro Phe Asp Pro Phe Val Phe Glu Ala Leu Asp
 20 25 30
 Cys Leu Leu Val Ile Ala Phe Asp Leu Glu Gln Cys Phe Lys Gln Ile
 35 40 45
 Pro Ala Thr Arg His Pro Phe Val Asn Arg Arg Arg Leu Pro Pro Tyr
 50 55 60

Pro Tyr Asn Ile Arg Gln Gly Phe Glu Glu Gly Gly Lys Thr Ser Glu
 65 70 75 80
 Gln Gly Gly Leu Val His Val Gly Ile Pro Arg Ala Asp Pro Leu Pro
 85 90 95
 His Arg Ile Ala Ala Phe Gly Gln His Pro Ala Gln Tyr His Ala Phe
 100 105 110
 Tyr Arg Leu Leu Pro Gly Glu Gln Leu Ile Arg Ala Ala His Phe
 115 120 125
 Ser Val Gln Thr Pro Ala Asp Val Gln Ile Gly Asn His Val Val Gln
 130 135 140
 Lys Arg Gln Ile Val Leu Ser Gln Ser Glu Met Ala Gln His Gly Arg
 145 150 155 160
 Gly Phe Lys His Lys His Phe Ile Asp Phe Lys Ser Ala Phe Gln Gln
 165 170 175
 Val Glu Gln Ala Gln Ser Met Lys Gln Arg Leu Ser Ala Ala Asp Phe
 180 185 190
 His Ile Arg Asn Gly Ile Arg Gln Cys Leu Arg Ala Gly Leu Arg Leu
 195 200 205
 Ser Glu His Gly Phe Asp Lys Arg Arg Ile Gly Phe Asp Ile Arg Gly
 210 215 220

<210> 769
 <211> 657
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 769
 atggttgccg tggatcctta tacggcaaaa gtggtcaaca ccatgccgcg caatcagggt 60
 tggatcacaca ctatggatga aatccacggc gatatgatgc tcggtgcggc aggcgattat 120
 cttttggaaa cggcagcttc actgaccatt attatggttg tcagcggctt gtaccttttg 180
 tgggcgaaac agcgcggcat taaagcgatg ctgctgccgc caaaaagcag ggcgcgttct 240
 tgggtggcgg atctgcacgg cgcgtttgga acttgggtgt cgttgatttt actgttgttc 300
 tgcctgtcgg gtattgcttg ggcaggtatt tggggcggca aattcgtgca ggcttggaa 360
 cagttccccg ccggcaaatg ggggtgtcgaa ccgaaccccg tttcaatcgt gccgaccac 420
 ggcgaggtat tgaatgacgg caaggttaag gaagtgccgt ggattttgga gcttatgcct 480
 atgcctgtct cagggacgac tgtgggtgaa aacggcatta accccaccga gcccaataac 540
 attggaaacc gtcgaccgtt tcgcgcggga aatcggtttc aaagggcggt atcagttgaa 600
 tttgccc aaa ggcgaggacg gggatatggac tttgtcgcag gattctatga gttatga 657

<210> 770
 <211> 218
 <212> PRT

<213> Neisseria gonorrhoeae

<400> 770

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Met Val Ala Val Asp Pro Tyr Thr Ala Lys Val Val Asn Thr Met Pro
  1           5           10           15

Arg Asn Gln Gly Trp Tyr His Thr Met Asp Glu Ile His Gly Asp Met
      20           25           30

Met Leu Gly Ala Ala Gly Asp Tyr Leu Leu Glu Thr Ala Ala Ser Leu
      35           40           45

Thr Ile Ile Met Val Val Ser Gly Leu Tyr Leu Trp Trp Ala Lys Gln
      50           55           60

Arg Gly Ile Lys Ala Met Leu Leu Pro Pro Lys Ser Arg Ala Arg Ser
      65           70           75           80

Trp Trp Arg Asn Leu His Gly Ala Phe Gly Thr Trp Val Ser Leu Ile
      85           90           95

Leu Leu Leu Phe Cys Leu Ser Gly Ile Ala Trp Ala Gly Ile Trp Gly
      100          105          110

Gly Lys Phe Val Gln Ala Trp Asn Gln Phe Pro Ala Gly Lys Trp Gly
      115          120          125

Val Glu Pro Asn Pro Val Ser Ile Val Pro Thr His Gly Glu Val Leu
      130          135          140

Asn Asp Gly Lys Val Lys Glu Val Pro Trp Ile Leu Glu Leu Met Pro
      145          150          155          160

Met Pro Val Ser Gly Thr Thr Val Gly Glu Asn Gly Ile Asn Pro Thr
      165          170          175

Glu Pro Asn Asn Ile Gly Asn Arg Arg Pro Phe Arg Ala Gly Asn Arg
      180          185          190

Phe Gln Arg Ala Leu Ser Val Glu Phe Ala Gln Arg Arg Gly Arg Gly
      195          200          205

Met Asp Phe Val Ala Gly Phe Tyr Glu Leu
      210          215
```

<210> 771

<211> 654

<212> DNA

<213> Neisseria meningitidis

<400> 771

```
atgggtcgcg tgcgtcctta tacggcaaaa gtggtcagta ccatgccgcg caatcagggt 60
tggtattaca cgatggatga aatccacagc gatatgatgc tcggtgcggc aggcgattat 120
cttttgaaa cggcagcttc actgaccatt attatggttg tcagcggctt gtacctttgg 180
tgggtgaaac ggcgcggcat caaggcgatg ctgctgccgt caaaaggcar ggcgcgttct 240
tggtggcgga atctgcacgg cacgtttgga acttgggtgt cgttgatttt gctgttgttc 300
```

```

tgcctgtcgg gtattgcttg ggcgggtatt tggggcggca agttcgtaca ggcttggagt 360
cagttccctg ccggtaaatg ggggtgtcgaa ccgaaccccg tttcagtcgt gccgacccac 420
ggcgaggtat tgaatgacgg caaggttaag gaagtgccgt gggttttgga gcttacgcct 480
atgcctgttt cagggacgac ygtgggcaaa gacggcatta accctgacga gccgatgaca 540
ttggaaccg tcgaccgctt tgcgcggnga aatcggtttc aaagggcggt atcagttgaa 600
tttgcccaaa ggcgaggacg gcgtatggac tttgtcgcag gattctatga gtta 654

```

<210> 772

<211> 218

<212> PRT

<213> *Neisseria meningitidis*

<400> 772

```

Met Val Ala Val Asp Pro Tyr Thr Ala Lys Val Val Ser Thr Met Pro
  1             5             10             15

```

```

Arg Asn Gln Gly Trp Tyr Tyr Thr Met Asp Glu Ile His Ser Asp Met
          20             25             30

```

```

Met Leu Gly Ala Ala Gly Asp Tyr Leu Leu Glu Thr Ala Ala Ser Leu
      35             40             45

```

```

Thr Ile Ile Met Val Val Ser Gly Leu Tyr Leu Trp Trp Val Lys Arg
  50             55             60

```

```

Arg Gly Ile Lys Ala Met Leu Leu Pro Ser Lys Gly Xaa Ala Arg Ser
  65             70             75             80

```

```

Trp Trp Arg Asn Leu His Gly Thr Phe Gly Thr Trp Val Ser Leu Ile
          85             90             95

```

```

Leu Leu Leu Phe Cys Leu Ser Gly Ile Ala Trp Ala Gly Ile Trp Gly
      100             105             110

```

```

Gly Lys Phe Val Gln Ala Trp Ser Gln Phe Pro Ala Gly Lys Trp Gly
      115             120             125

```

```

Val Glu Pro Asn Pro Val Ser Val Val Pro Thr His Gly Glu Val Leu
      130             135             140

```

```

Asn Asp Gly Lys Val Lys Glu Val Pro Trp Val Leu Glu Leu Thr Pro
      145             150             155             160

```

```

Met Pro Val Ser Gly Thr Thr Val Gly Lys Asp Gly Ile Asn Pro Asp
          165             170             175

```

```

Glu Pro Met Thr Leu Glu Thr Val Asp Arg Phe Ala Arg Xaa Asn Arg
      180             185             190

```

```

Phe Gln Arg Ala Leu Ser Val Glu Phe Ala Gln Arg Arg Gly Arg Arg
      195             200             205

```

```

Met Asp Phe Val Ala Gly Phe Tyr Glu Leu
      210             215

```

<210> 773
 <211> 653
 <212> DNA
 <213> Neisseria meningitidis

<400> 773
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 tggattacg cgatggatga aatccacagc gatatgatgc tcggttcgac aggtgattat 120
 cttttgaaa cggctgcatc gctgacgatt atcatgataa tcagcggttt gtacctttgg 180
 tgggtgaaac ggcgcggcat caaggcgatg ctgctgccgc caaaaggcag ggcgcgttct 240
 tggtgccgga atctgcacgg cgcgtttgga acttgggtgt cgttgatttt actgttgttc 300
 tgccctgctgg gtattgcttg ggcaggatatt tggggcggca agttcgtgca ggcttgagat 360
 cagttcccgg caggcaaatg ggtgtcgaa ccgaaccctg tttcagtcgt gccgaccac 420
 ggcgaggtat tgaatgacgg caaggttaag gaagtgccgt gggttttgga gcttacgcct 480
 atgcctgttt cagggacgac tgtgggcaaa gacggtatta accctgacga gccgatgaca 540
 ttggaaaccg tcgaccgttt tgcgcgggaa atcggtttca aaggcggtta tcagctgaat 600
 ttgcccaaa ggcgaggacgg cgtatggact ttgtgcagg attctatgag tta 653

<210> 774
 <211> 218
 <212> PRT
 <213> Neisseria meningitidis

<400> 774
 Met Val Ala Val Asp Pro Tyr Thr Ala Lys Val Val Ser Thr Met Pro
 1 5 10 15
 Arg Asn Gln Gly Trp Tyr Tyr Ala Met Asp Glu Ile His Ser Asp Met
 20 25 30
 Met Leu Gly Ser Thr Gly Asp Tyr Leu Leu Glu Thr Ala Ala Ser Leu
 35 40 45
 Thr Ile Ile Met Ile Ile Ser Gly Leu Tyr Leu Trp Trp Val Lys Arg
 50 55 60
 Arg Gly Ile Lys Ala Met Leu Leu Pro Pro Lys Gly Arg Ala Arg Ser
 65 70 75 80
 Trp Trp Arg Asn Leu His Gly Ala Phe Gly Thr Trp Val Ser Leu Ile
 85 90 95
 Leu Leu Leu Phe Cys Leu Ser Gly Ile Ala Trp Ala Gly Ile Trp Gly
 100 105 110
 Gly Lys Phe Val Gln Ala Trp Ser Gln Phe Pro Ala Gly Lys Trp Gly
 115 120 125
 Val Glu Pro Asn Pro Val Ser Val Val Pro Thr His Gly Glu Val Leu
 130 135 140
 Asn Asp Gly Lys Val Lys Glu Val Pro Trp Val Leu Glu Leu Thr Pro
 145 150 155 160
 Met Pro Val Ser Gly Thr Thr Val Gly Lys Asp Gly Ile Asn Pro Asp
 165 170 175

Glu Pro Met Thr Leu Glu Thr Val Asp Arg Phe Ala Arg Xaa Asn Arg
 180 185 190

Phe Gln Arg Ala Leu Ser Ala Glu Phe Ala Gln Arg Arg Gly Arg Arg
 195 200 205

Met Asp Phe Val Ala Gly Phe Tyr Glu Leu
 210 215

<210> 775
 <211> 642
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 775
 atgacggcaa ggtaaggaa gtgccgtgga ttttgagct tatgcctatg cctgtctcag 60
 ggacgactgt gggtgaaaac ggcattaacc ccaccgagcc caataacatt ggaaaccgtc 120
 gaccgtttcg cgcgggaaat cggtttcaaa gggcggtatc agttgaattt gcccaaaggc 180
 gaggacgggg tatggacttt gtcgcaggat tctatgagtt atgacatgat cagcccgttt 240
 gccgaccgca cgggtacatat cgaccagtac agcggcgaga ttcttgccga catccgtttt 300
 gacgattaca acccgttcgg caaatttatg gcggcaagca ttgcgctgca tatggggact 360
 ttgggctggt ggagcgtggt ggcgaacgtc gtgttctgcc ttgccgtgat ttttatcggc 420
 atcagcggt gcgtgatgtg gtggaaacgc cgtccgtccg gcgtggcggg cattgttcct 480
 ccggcgcaaa aaatcaaact gcccgctctg tggcgcatgg cattgccgct gctgttgatt 540
 gcaactgcttt tcccgaccgc gctgcttgcc attgccgtga tttggctggt ggataccttg 600
 ctgctgtcgc ggattcctgt gttgaggaaa tggtttaaat ga 642

<210> 776
 <211> 213
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 776
 Met Thr Ala Arg Leu Arg Lys Cys Arg Gly Phe Trp Ser Leu Cys Leu
 1 5 10 15
 Cys Leu Ser Gln Gly Arg Leu Trp Val Lys Thr Ala Leu Thr Pro Pro
 20 25 30
 Ser Pro Ile Thr Leu Glu Thr Val Asp Arg Phe Ala Arg Glu Ile Gly
 35 40 45
 Phe Lys Gly Arg Tyr Gln Leu Asn Leu Pro Lys Gly Glu Asp Gly Val
 50 55 60
 Trp Thr Leu Ser Gln Asp Ser Met Ser Tyr Asp Met Ile Ser Pro Phe
 65 70 75 80
 Ala Asp Arg Thr Val His Ile Asp Gln Tyr Ser Gly Glu Ile Leu Ala
 85 90 95
 Asp Ile Arg Phe Asp Asp Tyr Asn Pro Phe Gly Lys Phe Met Ala Ala
 100 105 110

Ser Ile Ala Leu His Met Gly Thr Leu Gly Trp Trp Ser Val Leu Ala
115 120 125

Asn Val Val Phe Cys Leu Ala Val Ile Phe Ile Gly Ile Ser Gly Cys
130 135 140

Val Met Trp Trp Lys Arg Arg Pro Ser Gly Val Ala Gly Ile Val Pro
145 150 155 160

Pro Ala Gln Lys Ile Lys Leu Pro Val Trp Trp Ala Met Ala Leu Pro
165 170 175

Leu Leu Leu Ile Ala Leu Leu Phe Pro Thr Ala Leu Leu Ala Ile Ala
180 185 190

Val Ile Trp Leu Leu Asp Thr Leu Leu Leu Ser Arg Ile Pro Val Leu
195 200 205

Arg Lys Trp Phe Lys
210

<210> 777
<211> 642
<212> DNA
<213> Neisseria meningitidis

<400> 777
atgacggcaa ggttaaggaa gtgccgtggg ttttgagact tacgcctatg cctgtttcag 60
ggacgacygt gggcaaagac ggcattaacc ctgacgagcc gatgacattg gaaaccgtcg 120
accgctttgc gcgngaaat cggtttcaaa gggcggtatc agttgaattt gcccaaaggc 180
gaggacggcg tatggacttt gtcgcaggat tctatgagtt acgacatgat cagcccgttt 240
gccgaccgca cggtagatat cgaccagtac agcggcaaaa tccttgccga catccgtttt 300
gacgattaca acccgttcgg caaatttatg gcggaacgca ttgcgctgca tatggggact 360
ctgggctggt ggagcgtggt ggcgaacgct ttgttctgcc ttgccgtcat ttttatcggt 420
atcagcggct gcgtgatgtg gtggaaacgc cgtccgaccg gagcgggtggg catcgttccg 480
ccggcgcaga aagtcaagct gccggtttgg tggatgatgg cattgccgct attggcaatc 540
gcaactgctc tcccgcacct actgcttgcc attgccgtga tttggctggt ggatacgtg 600
ctgttgctgc gcgattcctgt tttgaggaga tggtttaaata ga 642

<210> 778
<211> 213
<212> PRT
<213> Neisseria meningitidis

<400> 778
Met Thr Ala Arg Leu Arg Lys Cys Arg Gly Phe Trp Ser Leu Arg Leu
1 5 10 15

Cys Leu Phe Gln Gly Arg Xaa Trp Ala Lys Thr Ala Leu Thr Leu Thr
20 25 30

Ser Arg Xaa His Trp Lys Pro Ser Thr Ala Leu Arg Gly Glu Ile Gly
35 40 45

Phe Lys Gly Arg Tyr Gln Leu Asn Leu Pro Lys Gly Glu Asp Gly Val

50	55	60
Trp Thr Leu Ser Gln Asp Ser Met Ser Tyr Asp Met Ile Ser Pro Phe 65 70 75 80		
Ala Asp Arg Thr Val His Ile Asp Gln Tyr Ser Gly Lys Ile Leu Ala 85 90 95		
Asp Ile Arg Phe Asp Asp Tyr Asn Pro Phe Gly Lys Phe Met Ala Ala 100 105 110		
Ser Ile Ala Leu His Met Gly Thr Leu Gly Trp Trp Ser Val Leu Ala 115 120 125		
Asn Val Leu Phe Cys Leu Ala Val Ile Phe Ile Gly Ile Ser Gly Cys 130 135 140		
Val Met Trp Trp Lys Arg Arg Pro Thr Gly Ala Val Gly Ile Val Pro 145 150 155 160		
Pro Ala Gln Lys Val Lys Leu Pro Val Trp Trp Met Met Ala Leu Pro 165 170 175		
Leu Leu Ala Ile Ala Leu Leu Phe Pro Thr Ser Leu Leu Ala Ile Ala 180 185 190		
Val Ile Trp Leu Leu Asp Thr Leu Leu Leu Ser Arg Ile Pro Val Leu 195 200 205		
Arg Arg Trp Phe Lys 210		

<210> 779
 <211> 641
 <212> DNA
 <213> Neisseria meningitidis

<400> 779
 atgacggcaa ggttaaggaa gtgccgtggg ttttgagact tacgcctatg cctgtttcag 60
 ggacgactgt gggcaaagac ggtattaacc ctgacgagcc gatgacattg gaaaccgtcg 120
 accgttttgc gcgggaaatc ggtttcaaag ggcgttatca gctgaatttg cccaaaggcg 180
 aggacggcgt atggactttg tcgcaggatt ctatgagtta cgacatgac agcccgtttg 240
 ctgaccgcac ggtgcatatc gaccagtaca gcggcaagat tcttgccgac atccgttttg 300
 acgattacaa cccgttcggc aaatttatgg cggcaagcat tgcgctgcat atggggactt 360
 tgggctggtg gacgctggtg gcgaacgttt tgttctgcct tgccgtgatt tttatcggca 420
 tcagcggctg cgtgatgttg tggaaacgcc gtccgtccgg cgcggtgggc atggttccgc 480
 cggcgcaaaa aatcaagctg cccgtctggt gggcaatggc ggtgccgctg ctgctgattg 540
 cattgctttt cccgaccgcg ttgcttgcca ttgccgtgat ttggctgttg gatacgtctgc 600
 tgttgctgcg gattcctggt ttgaggagat ggtttaaatg a 641

<210> 780
 <211> 212
 <212> PRT
 <213> Neisseria meningitidis

<400> 780

Met Thr Ala Arg Leu Arg Lys Cys Arg Gly Phe Trp Ser Leu Arg Leu
1 5 10 15

Cys Leu Phe Gln Gly Arg Leu Trp Ala Lys Thr Val Leu Thr Leu Thr
20 25 30

Ser Arg His Trp Lys Pro Ser Thr Val Leu Arg Xaa Glu Ile Gly Phe
35 40 45

Lys Gly Arg Tyr Gln Leu Asn Leu Pro Lys Gly Glu Asp Gly Val Trp
50 55 60

Thr Leu Ser Gln Asp Ser Met Ser Tyr Asp Met Ile Ser Pro Phe Ala
65 70 75 80

Asp Arg Thr Val His Ile Asp Gln Tyr Ser Gly Lys Ile Leu Ala Asp
85 90 95

Ile Arg Phe Asp Asp Tyr Asn Pro Phe Gly Lys Phe Met Ala Ala Ser
100 105 110

Ile Ala Leu His Met Gly Thr Leu Gly Trp Trp Ser Val Leu Ala Asn
115 120 125

Val Leu Phe Cys Leu Ala Val Ile Phe Ile Gly Ile Ser Gly Cys Val
130 135 140

Met Trp Trp Lys Arg Arg Pro Ser Gly Ala Val Gly Met Val Pro Pro
145 150 155 160

Ala Gln Lys Ile Lys Leu Pro Val Trp Trp Ala Met Ala Val Pro Leu
165 170 175

Leu Leu Ile Ala Leu Leu Phe Pro Thr Ala Leu Leu Ala Ile Ala Val
180 185 190

Ile Trp Leu Leu Asp Thr Leu Leu Leu Ser Arg Ile Pro Val Leu Arg
195 200 205

Arg Trp Phe Lys
210

<210> 781

<211> 558

<212> DNA

<213> Neisseria gonorrhoeae

<400> 781

atgcacgacc acggcgccat ggatcgccgc ctccccgctt tcggaagtct gatgcggcga 60
gccgtaaatac adatcgacgc tgacggattt gaacctgcc tcacggggcg catcgatgac 120
ttctttggtt tcttcgtagc tttggatgcg gttgactgcc gcctgcactt tggggtcgaa 180
atcctgaatg ccgacgctca tgcggttgaa gccgagtctg ccgagcatga ggacggtgtc 240
gcggtctgact ttgcgcgggt cgatttcgat ggaatattcg ccggacggta tcagttcgaa 300

atgtttgctg atcatgcgga agacacgttc gatctgttcg tcgctcaaaa aggtcggcgt 360
 gccgccgccc aagtgcagtt gggcaagctg gtgccgtccg ttcagatgtg gagcgagcag 420
 ttccatttct ttttcaagat attcgatgta ggtatcggcg cggcttttgt ctttggatgat 480
 gattttgttg cagccgcagt agtagcagat ggtgttgcaa aacggaatgt gaatgtaaag 540
 ggaaagcggc ttgtttta 558

<210> 782

<211> 185

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 782

Met	His	Asp	His	Gly	Ala	Met	Asp	Arg	Arg	Leu	Pro	Ala	Phe	Gly	Ser
1				5					10					15	
Leu	Met	Arg	Arg	Ala	Val	Asn	Xaa	Ile	Asp	Ala	Asp	Gly	Phe	Glu	Pro
			20					25					30		
Cys	Leu	Thr	Gly	Gly	Ile	Asp	Asp	Phe	Phe	Gly	Phe	Phe	Val	Ala	Leu
		35					40					45			
Asp	Ala	Val	Asp	Cys	Arg	Leu	His	Phe	Gly	Val	Glu	Ile	Leu	Asn	Ala
	50					55					60				
Asp	Ala	His	Ala	Val	Glu	Ala	Glu	Ser	Ala	Glu	His	Glu	Asp	Gly	Val
65				70						75					80
Ala	Ala	Asp	Phe	Ala	Arg	Val	Asp	Phe	Asp	Gly	Ile	Phe	Ala	Gly	Arg
			85						90					95	
Tyr	Gln	Phe	Glu	Met	Phe	Ala	Asp	His	Ala	Glu	Asp	Thr	Phe	Asp	Leu
			100					105					110		
Phe	Val	Ala	Gln	Lys	Gly	Arg	Arg	Ala	Ala	Ala	Glu	Val	Gln	Leu	Gly
		115					120					125			
Lys	Leu	Val	Pro	Ser	Val	Gln	Met	Trp	Ser	Glu	Gln	Phe	His	Phe	Phe
	130					135					140				
Phe	Lys	Ile	Phe	Asp	Val	Gly	Ile	Gly	Ala	Ala	Phe	Val	Phe	Gly	Asp
145				150					155						160
Asp	Phe	Val	Ala	Ala	Ala	Val	Val	Ala	Asp	Gly	Val	Ala	Lys	Arg	Asn
			165					170						175	
Val	Asn	Val	Lys	Gly	Lys	Arg	Phe	Val							
		180					185								

<210> 783

<211> 531

<212> DNA

<213> *Neisseria meningitidis*

<400> 783

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atggyggttt tgatgcwcmg aagtctggtg cggcaggccg taaatcaaat cgacgctgac 60
ggatttgaac cccgcttcgc gcgcgcgcac gatgacttct ttggtttctt cgtaactttg 120
gatgcggttg accgcgcgct gcactttggg gtcgaaatcc tgaatgccga tgctcatgcg 180
gttgaagccg agtctgccga gcatgaggac ggtgtcgcgg ctgactttgc gcgggtcgat 240
ttcgatggag tattcgccgg tggggattaa ctcgaaatgt ttgcgtatca tgcggaagac 300
acgttcgata tgttcgtcgc tcaaaaaggt gcgtgccccg ccgaagtgca gttgggcaag 360
ctggtgcggt cgttcagat gtggagcgag cagttccatt tctttttcaa gatattcgat 420
gtaggcacgc gcgcggcttt tgtctttggt gatgattttg ttgcagccgc agtagtagca 480
gatggtgttg cagaacggaa tgtgaatgta aagggaagc ggtttgttta a 531

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<210> 784
 <211> 176
 <212> PRT
 <213> Neisseria meningitidis

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<400> 784
Met Xaa Val Leu Met Xaa Arg Ser Leu Val Arg Gln Ala Val Asn Gln
  1              5              10              15

Ile Asp Ala Asp Gly Phe Glu Pro Arg Phe Ala Arg Arg Ile Asp Asp
      20              25              30

Phe Phe Gly Phe Phe Val Thr Leu Asp Ala Val Asp Arg Arg Leu His
      35              40              45

Phe Gly Val Glu Ile Leu Asn Ala Asp Ala His Ala Val Glu Ala Glu
      50              55              60

Ser Ala Glu His Glu Asp Gly Val Ala Ala Asp Phe Ala Arg Val Asp
      65              70              75              80

Phe Asp Gly Val Phe Ala Gly Gly Asp Xaa Leu Glu Met Phe Ala Tyr
      85              90              95

His Ala Glu Asp Thr Phe Asp Leu Phe Val Ala Gln Lys Gly Ala Cys
      100             105             110

Pro Ala Glu Val Gln Leu Gly Lys Leu Val Pro Ser Val Gln Met Trp
      115             120             125

Ser Glu Gln Phe His Phe Phe Phe Lys Ile Phe Asp Val Gly Ile Gly
      130             135             140

Ala Ala Phe Val Phe Gly Asp Asp Phe Val Ala Ala Ala Val Val Ala
      145             150             155             160

Asp Gly Val Ala Glu Arg Asn Val Asn Val Lys Gly Lys Arg Phe Val
      165             170             175

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<210> 785
 <211> 534
 <212> DNA

<213> Neisseria meningitidis

<400> 785

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ggatttgaac cccgcttcgc gcgcgcgcatc gatgacttct ttggtttctt cgtaactttg 120
gatgcggttg accgcgcctt gcactttggg gtcgaaatcc tgaatgccga tgctcatgcg 180
gttgaagccg agtctgccga gcatgaggac ggtgtcgcgg ctgactttgc gcgggtcgat 240
ttcgatggag tattcgccgg tggggattaa ctcgaaatgt ttgcgtatca tgcggaagac 300
acgttcgatt tggtcgtcgc tcaaaaaggt cggcgtgccg ccgccgaagt gcagttgggc 360
aagctggtgc cgtccgttca gatgtggagc gagcagttcc atttctttt caagaaattc 420
gatgtaggca tcggcgcggc ttttgtcttt ggtgatgatt ttgttgcagc cgcagtagta 480
gcagatggtg ttgcagaacg gaatgtgaat gtaaagggaa agcggtttgt ttaa 534
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<210> 786

<211> 176

<212> PRT

<213> Neisseria meningitidis

<400> 786

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Met Val Val Leu Met Leu Arg Ser Leu Val Arg Gln Ala Val Asn Gln
  1             5             10             15

Ile Asp Ala Asp Gly Phe Glu Pro Arg Phe Ala Arg Arg Ile Asp Asp
      20             25             30

Phe Phe Gly Phe Phe Val Thr Leu Asp Ala Val Asp Arg Arg Leu His
      35             40             45

Phe Gly Val Glu Ile Leu Asn Ala Asp Ala His Ala Val Glu Ala Glu
      50             55             60

Ser Ala Glu His Glu Asp Gly Val Ala Ala Asp Phe Ala Arg Val Asp
      65             70             75             80

Phe Asp Gly Val Phe Ala Gly Gly Asp Leu Glu Met Phe Ala Tyr His
      85             90             95

Ala Glu Asp Thr Phe Asp Leu Val Val Ala Gln Lys Gly Arg Arg Ala
      100            105            110

Ala Ala Glu Val Gln Leu Gly Lys Leu Val Pro Ser Val Gln Met Trp
      115            120            125

Ser Glu Gln Phe His Phe Phe Phe Lys Lys Phe Asp Val Gly Ile Gly
      130            135            140

Ala Ala Phe Val Phe Gly Asp Asp Phe Val Ala Ala Ala Val Val Ala
      145            150            155            160

Asp Gly Val Ala Glu Arg Asn Val Asn Val Lys Gly Lys Arg Phe Val
      165            170            175
```

<210> 787
<211> 360
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 787
atggaattca ggcaccaggt agtggtagtt ggtgtcgaac catttggtca tttcgatggc 60
gaattggtct ttgttgccgc gcgccagttg gaagaattgt tccaaaggca ggttttggct 120
atcgaagccg aaacgggcgga gaatcgcgcc cgtggatact tgcaggtcga ggatgtgatg 180
gtagaaagtg aaatcacgta cagcaacgta atcagcgtta ggagcagctt ggtgtttcca 240
gtttttctcg cgcaggctct tggcaacgct gagcagctct tgttcactga tctctttgcg 300
ccagtatttt tcttgggcga atttcaattc acggaaggcg ccgacacgcg ggaagcctga 360

<210> 788
<211> 119
<212> PRT
<213> *Neisseria gonorrhoeae*

<400> 788
Met Glu Phe Arg His Gln Val Val Val Val Gly Val Glu Pro Phe Gly
1 5 10 15
His Phe Asp Gly Glu Leu Val Phe Val Ala Ala Arg Gln Leu Glu Glu
20 25 30
Leu Phe Gln Arg Gln Val Leu Ala Ile Glu Ala Glu Thr Gly Gly Asn
35 40 45
Arg Ala Arg Gly Tyr Leu Gln Val Glu Asp Val Met Val Glu Ser Glu
50 55 60
Ile Thr Tyr Ser Asn Val Ile Ser Val Arg Ser Ser Leu Val Phe Pro
65 70 75 80
Val Phe Leu Ala Gln Val Phe Gly Asn Val Glu Gln Leu Leu Phe Thr
85 90 95
Asp Leu Phe Ala Pro Val Phe Phe Leu Gly Glu Phe Gln Phe Thr Glu
100 105 110
Gly Ala Asp Thr Arg Glu Ala
115

<210> 789
<211> 359
<212> DNA
<213> *Neisseria meningitidis*

<400> 789
gtggaattca ggcaccaagt agtggtagtt ggtgtcgaac catttggtca tttcgatagc 60
gaattggtct ttgttacgcg gcgccagttg gaagaattgt tccaaagaca ggttttggct 120
gtcgaagccg aagcgggcgga gaatcgcgcc ggtggcgact tgcaggtcga ggatgtggtc 180
gtagaaagtg aaatcsctac ggcaacgaaa tcggcgttgg cagcgacctg gtgtttccag 240
tttttctcgc gcaagtcttt agcaacagcc agcaattctt gctcgtgat ttctttgcbc 300

cagtattttt cttgtgcgaa tttcaattcg cggaaggcgc cgacacgcgg gaagcctga 359

<210> 790

<211> 119

<212> PRT

<213> *Neisseria meningitidis*

<400> 790

Val	Glu	Phe	Arg	His	Gln	Val	Val	Val	Val	Gly	Val	Glu	Pro	Phe	Gly
1				5					10					15	
His	Phe	Asp	Ser	Glu	Leu	Val	Phe	Val	Thr	Ala	Arg	Gln	Leu	Glu	Glu
			20					25					30		
Leu	Phe	Gln	Arg	Gln	Val	Leu	Ala	Val	Glu	Ala	Glu	Ala	Gly	Gly	Asn
		35					40						45		
Arg	Ala	Gly	Gly	Asp	Leu	Gln	Val	Glu	Asp	Val	Val	Val	Glu	Ser	Glu
		50				55						60			
Ile	Xaa	Tyr	Gly	Asn	Glu	Ile	Gly	Val	Gly	Ser	Asp	Leu	Val	Phe	Pro
65					70					75					80
Val	Phe	Leu	Ala	Gln	Val	Phe	Ser	Asn	Ser	Gln	Gln	Phe	Leu	Leu	Ala
				85					90					95	
Asp	Phe	Phe	Ala	Pro	Val	Phe	Phe	Leu	Cys	Glu	Phe	Gln	Phe	Ala	Glu
			100					105					110		
Gly	Ala	Asp	Thr	Arg	Glu	Ala									
			115												

<210> 791

<211> 360

<212> DNA

<213> *Neisseria meningitidis*

<400> 791

gtggaattca ggcaccaagt agtggtagtt ggtgtcgaac catttggtca tttcgatagc 60
gaattggtct ttgttaccgc gcgccagttg gaagaattgt tccaaagata gggttttggt 120
gtcgaagccg aagcgggscg gaatcgcgcc ggtggcgact tgcaggtcga ggatgtggtc 180
gtagaaagtg aaatcgcccta cggcaacgta atcggcgttg gcagcggcct ggtgtttcca 240
gtttttctcg cgcaagtctt tagcaacagc cagcaattct tgctcgctga tttctttgcg 300
ccagtatttt tcttgtgcga atttcaattc gcggaaggca ccgacacgcg ggaagcctga 360

<210> 792

<211> 118

<212> PRT

<213> *Neisseria meningitidis*

<400> 792

Val	Glu	Phe	Arg	His	Gln	Val	Val	Val	Val	Gly	Val	Glu	Pro	Phe	Gly
1				5					10					15	

His Phe Asp Ser Glu Leu Val Phe Val Thr Ala Arg Gln Leu Glu Glu
 20 25 30
 Leu Phe Gln Arg Val Leu Ala Val Glu Ala Glu Ala Gly Gly Asn Arg
 35 40 45
 Ala Gly Gly Asp Leu Gln Val Glu Asp Val Val Val Glu Ser Glu Ile
 50 55 60
 Ala Tyr Gly Asn Val Ile Gly Val Gly Ser Gly Leu Val Phe Pro Val
 65 70 75 80
 Phe Leu Ala Gln Val Phe Ser Asn Ser Gln Gln Phe Leu Leu Ala Asp
 85 90 95
 Phe Phe Ala Pro Val Phe Phe Leu Cys Glu Phe Gln Phe Ala Glu Gly
 100 105 110
 Thr Asp Thr Arg Glu Ala
 115

<210> 793
 <211> 669
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 793
 atggattctt ttttcaaacc ggcagtttgg gcggttttgt ggctgatgtt tgccgtccgc 60
 cccgcccttg ccgacgagtt gaccaacctg ctcagcagcc gcgagcagat tctcagacag 120
 ttgcccgaag acgaacagcc cgttttacct gtcaaccgag ccccgcccg gcgggcgggc 180
 aatgccgacg aactcatcgg cggcgcgatg gggcttaacg aacagcccgt tgtacgcgtc 240
 aaccgagccn ccgcccggcg ggcgggcaat gccgacaaac tcatcggcag cgcgatgcgg 300
 cttttgggta ttgcctaccg ctacggcggc acatcggtgt ctaccggttt tgactgcagc 360
 ggattcatgc agcacatctt caaacgcgcc atgggcatca acctgccgcg cacgtcggcg 420
 gaacaggcgc ggatgggcg ccccgttgcc cgaagcgaat tgcagcccgg ggatatgggtg 480
 tttttccgca cgctcggcg cagccgcatt tcccatgtcg gactttatat cggcaacaac 540
 cgcttcatcc acgcgccgcg cacggggaaa aatatcgaat tcaccagcct gagccacaaa 600
 tattggagcg gcaaatatgc gttcgcccgc cgggtcaaga aaaacgaccc gtcacgcgtt 660
 ctgaactga 669

<210> 794
 <211> 222
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 794
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45

Leu Pro Val Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Gly Ala Met Gly Leu Asn Glu Gln Pro Val Val Arg Val
 65 70 75 80
 Asn Arg Ala Xaa Ala Arg Arg Ala Gly Asn Ala Asp Lys Leu Ile Gly
 85 90 95
 Ser Ala Met Arg Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser
 100 105 110
 Val Ser Thr Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys
 115 120 125
 Arg Ala Met Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg
 130 135 140
 Met Gly Ala Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val
 145 150 155 160
 Phe Phe Arg Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr
 165 170 175
 Ile Gly Asn Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile
 180 185 190
 Glu Ile Thr Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe
 195 200 205
 Ala Arg Arg Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 210 215 220

<210> 795
 <211> 747
 <212> DNA
 <213> Neisseria meningitidis

<400> 795
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 gccgacgagt tgaccaacct gctcagcagc cgcgagcaga ttctcagaca gtttgccgaa 120
 gacgaacagc ccgtttttacc catcaaccga gccccgccc ggcgggcggg caatgccgac 180
 gaactcatcg gcagcgcgat ggggcttaac gaacagcccg ttttaccgt caaccgagtc 240
 cccgcccggc gggcgggcaa tgccgacgaa ctcatcggca acgcgatggg gcttaacgaa 300
 cagcccgttt taccgtcaa ccgagcccc gcccgcggg cgggcaatgc cgacgaactc 360
 atcggaacg cgatgggact tttgggtatt gcctaccgt acggcggcac atcggtttct 420
 accggttttg actgcagcgg cttcatgcag cacatcttca aacgcgccat gggcatcaac 480
 ctgccgcgca cgtcggcaga acaggcacgg atgggtacgc cggttgcccg aagcgaattg 540
 cagcccggag atatggtgtt tttcgcacg ctccggcgca gccgatttc ccatgtcggg 600
 ctttatatcg gcaacaaccg cttcatccac gcgccgcgca cggggaaaaa tatcgaaatc 660
 accagcctga gccacaaata ttggagcggc aaatacgcgt tcgcccgcg ggtcaagaaa 720
 aacgaccggt cccgctttct gaactga 747

<210> 796
<211> 248
<212> PRT
<213> Neisseria meningitidis

<400> 796

Phe Ser Asn Pro Ala Val Trp Ala Val Leu Trp Leu Xaa Phe Ala Val
1 5 10 15
Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser Ser Arg Glu
20 25 30
Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val Leu Pro Ile
35 40 45
Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
50 55 60
Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Val
65 70 75 80
Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
85 90 95
Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala Pro Ala Arg
100 105 110
Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met Gly Leu Leu
115 120 125
Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr Gly Phe Asp
130 135 140
Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met Gly Ile Asn
145 150 155 160
Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr Pro Val Ala
165 170 175
Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg Thr Leu Gly
180 185 190
Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn Asn Arg Phe
195 200 205
Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr Ser Leu Ser
210 215 220
His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg Val Lys Lys
225 230 235 240
Asn Asp Pro Ser Arg Phe Leu Asn
245

<210> 797

<211> 843
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 797
 atggattctt ttttcaaacc ggcagtttgg gcggttttgt ggctgatgtt tgccgtccgc 60
 cccgcccttg cgcacgagtt gaccaacctg ctcagcagcc gcgagcagat tctcagacag 120
 tttgccgaag acgaacagcc cgtttttacc atcaaccgan ccccgcccg gcggggcgggc 180
 aatgccgacg aactcatcgg cagcgcgatg gggcttaacg aacagcccgt tttaccogtc 240
 aaccgantcc ccgcccggcg ggcgggcaat gccgacnaac tcatcggcaa cgcgatgggg 300
 cttaacgaac agcccgtttt acccgtaac cagatccccg cccggcgggc gggcaatgcc 360
 gacgaactca tcggcaacgc gatggggcgtt aacgaacagc ccgttttacc cgtcaaccga 420
 gcccccggcc ggcgggcggg caatgccgac gaactcatcg gcaacgcgat gggacttttg 480
 ggtattgcct accgctacgg cggcacatcg atttctaccg gttttgactg cagcggcttc 540
 atgcagcaca ttttcaaacg cgccatgggc atcaacctgc cgcgcacgtc ggcagaacag 600
 gcgcgggatg gtacgccggg tgcccgaagc gaattgcagc ccggggatat ggtgtntttc 660
 cgcacgctcg gcggcagccg catttcccat gtcggacttt atatcggcaa caaccgcttc 720
 atccacgcgc cgcgcacggg gaaaaatata gaaatcacca gcctgagcca caaatattgg 780
 agcggcaaat acgcgttcgc ccgcccgggc aagaaaaacg acccgccccg ctttctgaac 840
 tga 843

<210> 798
 <211> 280
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 798
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Xaa Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Xaa Pro Ala Arg Arg Ala Gly Asn Ala Asp Xaa Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Val
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala Pro Ala Arg
 130 135 140
 Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met Gly Leu Leu
 145 150 155 160

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Val Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Gly Ala Met Gly Leu Asn Glu Gln Pro Val Val Arg Val
 65 70 75 80
 Asn Arg Ala Xaa Ala Arg Arg Ala Gly Asn Ala Asp Lys Leu Ile Gly
 85 90 95
 Ser Ala Met Arg Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser
 100 105 110
 Val Ser Thr Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys
 115 120 125
 Arg Ala Met Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg
 130 135 140
 Met Gly Ala Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val
 145 150 155 160
 Phe Phe Arg Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr
 165 170 175
 Ile Gly Asn Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile
 180 185 190
 Glu Ile Thr Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe
 195 200 205
 Ala Arg Arg Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 210 215 220

<210> 801

<211> 756

<212> DNA

<213> Neisseria meningitidis

<400> 801

atggattctt ttttcaaacc ggcagtttgg gcggttttgt ggctgatggt tgccgtccgc 60
 cccgcccttg cgcagagatt gaccaacytg ctacagcagc gcgagcagat tctcagacag 120
 tttgccgaag acgaacagcc cgtttttacc atcaaccgag ccccccgcgc gcggggcgggc 180
 aatgccgacg aactcatcgg cagcgcgatg gggcttaacg aacagcccggt tttacccgtc 240
 aaccgagtcc ccgcccggcg ggcgggcaat gccgacgaac tcatcggcaa cgcgatgggg 300
 cttaacgaac agcccgtttt acccgtcaac cgagcccccg cccggcgggc gggcaatgcc 360
 gacgaactca tcggcaacgc gatgggactt ttgggtattg cctaccgcta cggcggcaca 420
 tcggttttcta ccggttttga ctgcagcggc ttcatgcagc acatcttcaa acgcgccatg 480
 ggcatacaacc tgccgcgcac gtcggcagaa caggcacgga tgggtacgcc ggttgcccga 540
 agcgaattgc agcccggaga tatggtgttt ttccgcacgc tcggcggcag ccgcatttcc 600
 catgtcggac tttatatcgg caacaaccgc ttcatccacg cgccgcgcac ggggaaaaat 660
 atcgaaatca ccagcctgag ccacaaatat tggagcggca aatacgcgtt cgcccgcggg 720
 gtcaagaaaa acgacccgtc ccgctttctg aactga 756

<210> 802
 <211> 251
 <212> PRT
 <213> Neisseria meningitidis

<400> 802
 Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
 1 5 10 15
 Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
 20 25 30
 Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
 65 70 75 80
 Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
 85 90 95
 Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
 100 105 110
 Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
 115 120 125
 Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
 130 135 140
 Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
 145 150 155 160
 Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
 165 170 175
 Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
 180 185 190
 Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
 195 200 205
 Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
 210 215 220
 Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
 225 230 235 240
 Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 245 250

<210> 803

<211> 843

<212> DNA

<213> *Neisseria meningitidis*

<400> 803

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atggattctt ttttcaaacc ggcagtttgg gcggttttgt ggctgatggt tgccgtccgc 60
cccgcccttg ccgacgagtt gaccaacctg ctcagcagcc gcgagcagat tctcagacag 120
tttgccgaag acgaacagcc cgttttaccc atcaaccgan cccccgcccg gcgggcgggc 180
aatgccgacg aactcatcgg cagcgcgatg gggtttaacg aacagcccgt tttaccgctc 240
aaccgantcc ccgcccggcg ggcgggcaat gccgacnaac tcatcggcaa cgcgatgggg 300
cttaacgaac agcccgtttt acccgtcaac cgagtccccg ccggcggggc gggcaatgcc 360
gacgaactca tcggcaacgc gatggggctt aacgaacagc ccgttttacc cgtcaaccga 420
gcccccgccc ggcgggcggg caatgccgac gaactcatcg gcaacgcgat gggacttttg 480
ggtattgcct accgctacgg cggcacatcg atttctaccg gttttgactg cagcggcttc 540
atgcagcaca tcttcaaacg cgccatgggc atcaacctgc cgcgcacgtc ggcagaacag 600
gcgcgggatg gtacgccggt tgcccgaagc gaattgcagc ccggggatat ggtgtntttc 660
cgcacgctcg gcgcgacggc catttcccat gtcggacttt atatcggcaa caaccgcttc 720
atccacgcgc cgcgcacggg gaaaaatatc gaaatcacca gcctgagcca caaatattgg 780
agcggcaaat acgcgttcgc ccgcccgggtc aagaaaaacg acccgtcccg ctttctgaac 840
tga
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<210> 804

<211> 280

<212> PRT

<213> *Neisseria meningitidis*

<400> 804

```
Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
  1             5             10             15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
      20             25             30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
      35             40             45

Leu Pro Ile Asn Arg Xaa Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
      50             55             60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
      65             70             75             80

Asn Arg Xaa Pro Ala Arg Arg Ala Gly Asn Ala Asp Xaa Leu Ile Gly
      85             90             95

Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Val
      100            105            110

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
      115            120            125

Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala Pro Ala Arg
      130            135            140
```

Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met Gly Leu Leu
 145 150 155 160

Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr Gly Phe Asp
 165 170 175

Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met Gly Ile Asn
 180 185 190

Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr Pro Val Ala
 195 200 205

Arg Ser Glu Leu Gln Pro Gly Asp Met Val Xaa Phe Arg Thr Leu Gly
 210 215 220

Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn Asn Arg Phe
 225 230 235 240

Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr Ser Leu Ser
 245 250 255

His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg Val Lys Lys
 260 265 270

Asn Asp Pro Ser Arg Phe Leu Asn
 275 280

<210> 805

<211> 597

<212> DNA

<213> Neisseria gonorrhoeae

<400> 805

atgagcgaaa tcctcaggca gccacgcgtt ctgcttttcc tcacgcttgc cgtgtacgcg 60
 cttgcgatta tcgtgcgcac gcgcacgggc aatatcttct gcaaccccggt actcgtcagc 120
 actatcgtgc tgattgccta cctgaaaatc ctcggtatcg attatgcggt gtaccacaac 180
 gccgcgcaat tcattgattt tcggctgaaa cccgccgctcg tcgtgcttgc cgtgccgctc 240
 taccaaaacc gccgtaaaat cttcaaccag tggctgcccc tcatcgtttc gcagcttgcg 300
 ggcagcggtta cgggcattgt tacggggatg tattttgccg cttggctcgg gccggatacc 360
 caattctcct tcccgcctcg tcttcaatat ctgttattta caccctctgg aatcccaatt 420
 cacaccctgt atgcgcgggt tctcccgcga tttctgttgc ctccgcctct cctgccgcgc 480
 ctccgcccgc atacattgcg ccggttcaca atacttccaa aaaaactacg gccgtttaag 540
 cccctcctcc cagttgtggt ctttctcct ccgggcctcg cccctcccct cttataa 597

<210> 806

<211> 198

<212> PRT

<213> Neisseria gonorrhoeae

<400> 806

Met Ser Glu Ile Leu Arg Gln Pro Ser Val Leu Leu Phe Leu Thr Leu
 1 5 10 15

Ala Val Tyr Ala Leu Ala Ile Ile Val Arg Thr Arg Thr Gly Asn Ile

	20		25		30
Phe Cys Asn Pro Val Leu Val Ser Thr Ile Val Leu Ile Ala Tyr Leu					
	35		40		45
Lys Ile Leu Gly Ile Asp Tyr Ala Val Tyr His Asn Ala Ala Gln Phe					
	50		55		60
Ile Asp Phe Arg Leu Lys Pro Ala Val Val Val Leu Ala Val Pro Leu					
	65		70		75
Tyr Gln Asn Arg Arg Lys Ile Phe Asn Gln Trp Leu Pro Val Ile Val					
		85		90	95
Ser Gln Leu Ala Gly Ser Val Thr Gly Ile Val Thr Gly Met Tyr Phe					
	100		105		110
Ala Ala Trp Leu Gly Pro Asp Thr Gln Phe Ser Phe Pro Pro Arg Leu					
	115		120		125
Gln Tyr Leu Leu Phe Thr Pro Ser Gly Ile Pro Ile His Thr Leu Tyr					
	130		135		140
Ala Arg Val Leu Pro Pro Phe Leu Leu Pro Pro Pro Leu Leu Pro Arg					
	145		150		155
Leu Gly Pro His Thr Leu Arg Arg Phe Thr Ile Leu Pro Lys Lys Leu					
		165		170	175
Arg Pro Phe Lys Pro Leu Leu Pro Val Val Val Leu Ser Pro Pro Gly					
	180		185		190
Leu Ala Pro Pro Leu Leu					
	195				

<210> 807
 <211> 693
 <212> DNA
 <213> Neisseria meningitidis

<400> 807
 atgaacgaaa tcctcaggca gccacgcgtt ctgcttttcc tcacgcttgc cgtgtacgcg 60
 cttgcgatta tcgtgcgcac gcgcacgggc aatatcttct gcaaccccggt actcgtcagc 120
 actatcgtgc tgattgccta cctgaaaatc ctcggtatcg attatgcggt gtaccacaac 180

 gccgcgcaat tcattgattt ttggctgaaa cccgcgcgtc tcgtgcttgc cgtgccgctc 240
 taccaaaacc gccgtaaaat cttcaaccag tggctgcccg tcatcgtttc acagcttgcg 300
 ggcagcggtta cgggcattgt tacagggatg tattttgcc aatggctggg cgcggaacgc 360
 gaagtgcgtc tctcgtcgc gtccaaatct gttaccaacc ccatcgctat tgaaatcacc 420
 cgtccatcg gcggcattcc cgccattacc gccgccaccg tcatcattgc cgtctggtc 480
 ggacagattg ccggttacaa aatgctgaag aacacggtcg tcatgccctc gtccgtgggt 540
 atgtcgtcgc gcacggcttc gcacgcgatg gggattgccg cctcgtcga acgcagccgc 600
 cgtatggcgg catacgcggg gctggggctg acgttcaacg gcgtactgac cgcgctgatt 660
 gcgcgcgtgc tcatccccgt tttgggattt tga 693

<210> 808
<211> 230
<212> PRT
<213> Neisseria meningitidis

<400> 808
Met Asn Glu Ile Leu Arg Gln Pro Ser Val Leu Leu Phe Leu Thr Leu
1 5 10 15
Ala Val Tyr Ala Leu Ala Ile Ile Val Arg Thr Arg Thr Gly Asn Ile
20 25 30
Phe Cys Asn Pro Val Leu Val Ser Thr Ile Val Leu Ile Ala Tyr Leu
35 40 45
Lys Ile Leu Gly Ile Asp Tyr Ala Val Tyr His Asn Ala Ala Gln Phe
50 55 60
Ile Asp Phe Trp Leu Lys Pro Ala Val Val Val Leu Ala Val Pro Leu
65 70 75 80
Tyr Gln Asn Arg Arg Lys Ile Phe Asn Gln Trp Leu Pro Val Ile Val
85 90 95
Ser Gln Leu Ala Gly Ser Val Thr Gly Ile Val Thr Gly Met Tyr Phe
100 105 110
Ala Lys Trp Leu Gly Ala Glu Arg Glu Val Val Leu Ser Leu Ala Ser
115 120 125
Lys Ser Val Thr Asn Pro Ile Ala Ile Glu Ile Thr Arg Ser Ile Gly
130 135 140
Gly Ile Pro Ala Ile Thr Ala Ala Thr Val Ile Ile Ala Gly Leu Val
145 150 155 160
Gly Gln Ile Ala Gly Tyr Lys Met Leu Lys Asn Thr Val Val Met Pro
165 170 175
Ser Ser Val Gly Met Ser Leu Gly Thr Ala Ser His Ala Met Gly Ile
180 185 190
Ala Ala Ser Leu Glu Arg Ser Arg Arg Met Ala Ala Tyr Ala Gly Leu
195 200 205
Gly Leu Thr Phe Asn Gly Val Leu Thr Ala Leu Ile Ala Pro Leu Leu
210 215 220
Ile Pro Val Leu Gly Phe
225 230

<210> 809
<211> 693
<212> DNA
<213> Neisseria meningitidis

<400> 809

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atgaacgaaa tcctcaggca gccgagcatc ctgcttttcc tcacgcttgc cgtgtacgcg 60
cttgcgatta tcgtgcgcac ggcacagggt aatatcttct gcaaccccggt actcgtcagc 120
actatcgtgc tgattgccta cctgaaaatc ctcggtatcg attatgcggt gtaccacaac 180
gccgcgcagt ttatcgattt ctggctcaag cccgcgcgtc tcgtgcttgc cgtgccgctc 240
taccaaaacc gccgtaaaat cttcaaccaa tggctgcccgc tcatcgtttc gcagcttgcg 300
ggcagcgtta cgggcattgt tacgggggatg tattttgccca aatggctggg cgcggaacgc 360
gaagtcgtcc tctcgctcgc gtccaaatct gttaccaatc ctatcgccat cgaaatcacc 420
cgctccatcg gcggcattcc cgccattacc gccgccaccg tcatcattgc cggcctggtc 480
ggacagattg ccggttacia aatgttgaaa aacacgggtc ttatgccctc atctgtcggg 540
atgtcgtcgc gcacggcttc gcacgcgatg ggcattgccg cctcgctcga acgcagccgc 600
cgcatggcgg catacgcggg gctggggctg acgttcaacg gcgtactgac cgcgctgatt 660
gcgcgcgtgc ttatccccgt tttgggattt tga 693
```

<210> 810

<211> 230

<212> PRT

<213> Neisseria meningitidis

<400> 810

```
Met Asn Glu Ile Leu Arg Gln Pro Ser Ile Leu Leu Phe Leu Thr Leu
  1             5             10             15
```

```
Ala Val Tyr Ala Leu Ala Ile Ile Val Arg Thr Arg Thr Gly Asn Ile
      20             25             30
```

```
Phe Cys Asn Pro Val Leu Val Ser Thr Ile Val Leu Ile Ala Tyr Leu
      35             40             45
```

```
Lys Ile Leu Gly Ile Asp Tyr Ala Val Tyr His Asn Ala Ala Gln Phe
      50             55             60
```

```
Ile Asp Phe Trp Leu Lys Pro Ala Val Val Val Leu Ala Val Pro Leu
      65             70             75             80
```

```
Tyr Gln Asn Arg Arg Lys Ile Phe Asn Gln Trp Leu Pro Val Ile Val
      85             90             95
```

```
Ser Gln Leu Ala Gly Ser Val Thr Gly Ile Val Thr Gly Met Tyr Phe
     100             105             110
```

```
Ala Lys Trp Leu Gly Ala Glu Arg Glu Val Val Leu Ser Leu Ala Ser
     115             120             125
```

```
Lys Ser Val Thr Asn Pro Ile Ala Ile Glu Ile Thr Arg Ser Ile Gly
     130             135             140
```

```
Gly Ile Pro Ala Ile Thr Ala Ala Thr Val Ile Ile Ala Gly Leu Val
     145             150             155             160
```

```
Gly Gln Ile Ala Gly Tyr Lys Met Leu Lys Asn Thr Val Val Met Pro
     165             170             175
```

```
Ser Ser Val Gly Met Ser Leu Gly Thr Ala Ser His Ala Met Gly Ile
     180             185             190
```

Ala Ala Ser Leu Glu Arg Ser Arg Arg Met Ala Ala Tyr Ala Gly Leu
195 200 205

Gly Leu Thr Phe Asn Gly Val Leu Thr Ala Leu Ile Ala Pro Leu Leu
210 215 220

Ile Pro Val Leu Gly Phe
225 230

<210> 811

<211> 345

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 811

atgaacatca tccgcgcgct cctcatcatc ctcggtgcc tcgccgccgg cgaaaccgcc 60
gttttcctag caggcatcaa actgcccggc agcatcgctg gcatgggcgt gctgtttgcg 120
cttttgcagg cgggttggt caaaacgtct tggctgcaac agcttaccga cgcgctgatg 180
gcaaacctga cgctgttcct cgtgccgccc tgcgtggcgg tcatcagcta ttgggatttg 240
attgccgacg attggttttc gatactggtt tccgcctccg ccagcacttt gtgcgtactg 300
ctggttacgg gcaaggttca ccgctggata cggagcatta tctga 345

<210> 812

<211> 114

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 812

Met Asn Ile Ile Arg Ala Leu Leu Ile Ile Leu Gly Cys Leu Ala Ala
1 5 10 15

Gly Glu Thr Ala Val Phe Leu Ala Gly Ile Lys Leu Pro Gly Ser Ile
20 25 30

Val Gly Met Gly Val Leu Phe Ala Leu Leu Gln Ala Gly Trp Leu Lys
35 40 45

Thr Ser Trp Leu Gln Gln Leu Thr Asp Ala Leu Met Ala Asn Leu Thr
50 55 60

Leu Phe Leu Val Pro Pro Cys Val Ala Val Ile Ser Tyr Leu Asp Leu
65 70 75 80

Ile Ala Asp Asp Trp Phe Ser Ile Leu Val Ser Ala Ser Ala Ser Thr
85 90 95

Leu Cys Val Leu Leu Val Thr Gly Lys Val His Arg Trp Ile Arg Ser
100 105 110

Ile Ile

<210> 813

<211> 203
<212> DNA
<213> *Neisseria meningitidis*

<400> 813
acgtcttkgc tgcaacagct taccgacgcg ctgatgtcga acctgacgct gttcctcgtg 60
ccgcctgcgt gg'cggtcatc agctatttgg atttgattgc cgacgattgg ttttcgatac 120
tggtttccgc ctccgccagc actttgtgcg tactgctggt tacgggcaaa gtccaccggt 180
ggatacgggg tattatccga tga 203

<210> 814
<211> 67
<212> PRT
<213> *Neisseria meningitidis*

<400> 814
Thr Ser Xaa Leu Gln Gln Leu Thr Asp Ala Leu Met Ser Asn Leu Thr
1 5 10 15
Leu Phe Leu Val Pro Pro Cys Val Ala Val Ile Ser Tyr Leu Asp Leu
20 25 30
Ile Ala Asp Asp Trp Phe Ser Ile Leu Val Ser Ala Ser Ala Ser Thr
35 40 45
Leu Cys Val Leu Leu Val Thr Gly Lys Val His Arg Trp Ile Arg Gly
50 55 60
Ile Ile Arg
65

<210> 815
<211> 345
<212> DNA
<213> *Neisseria meningitidis*

<400> 815
atgaacatca tccgcgcgct cctcatcatc ctcggtgcc tgcgcccgcg cgaaaccgcc 60
gttttcctag caggcatcaa actgcccggc agcatcgteg gcatgggcgt actgtttgcg 120
cttttgacag cggttggtgt caaaacgtct tggctgcaac agcttaccga cgcgctgatg 180
gcgaatctga cgttggttct cgtgccgccc tgcgtggcgg tcatcagcta tttggatttg 240
attgccgacg attggttttc gatactggtt tccgcctccg ccagcacttt gtgcgtactg 300
ctggttacag gcaaggttca ccgctggata cggagcatta tctga 345

<210> 816
<211> 114
<212> PRT
<213> *Neisseria meningitidis*

<400> 816
Met Asn Ile Ile Arg Ala Leu Leu Ile Ile Leu Gly Cys Leu Ala Thr
1 5 10 15

Gly Glu Thr Ala Val Phe Leu Ala Gly Ile Lys Leu Pro Gly Ser Ile
 20 25 30
 Val Gly Met Gly Val Leu Phe Ala Leu Leu Gln Ala Gly Trp Val Lys
 35 40 45
 Thr Ser Trp Leu Gln Gln Leu Thr Asp Ala Leu Met Ala Asn Leu Thr
 50 55 60
 Leu Phe Leu Val Pro Pro Cys Val Ala Val Ile Ser Tyr Leu Asp Leu
 65 70 75 80
 Ile Ala Asp Asp Trp Phe Ser Ile Leu Val Ser Ala Ser Ala Ser Thr
 85 90 95
 Leu Cys Val Leu Leu Val Thr Gly Lys Val His Arg Trp Ile Arg Ser
 100 105 110
 Ile Ile

<210> 817
 <211> 324
 <212> DNA
 <213> Neisseria meningitidis

<400> 817
 atgaaaaaat tattgattgc cgcaatgatg gcggctgcct tggcagcttg ttcgcaagaa 60
 gccaaacagg aggttaagga agcgggttcaa gccgttgagt ccgatgttaa agacactgcg 120
 gcttctgccg ccgagtctgc cgcttctgcc gtcgaagaag cgaaagacca agtcaaagat 180
 gctgcggtcg atgcaaaggc aagtgccgag gaagctgtaa ctgaagccaa agaagctgta 240
 actgaagcag ctaaagatac tttgaacaaa gctgccgacg cgactcagga agcggcgacac 300
 aaaatgaaag atgccgccaa ataa 324

<210> 818
 <211> 107
 <212> PRT
 <213> Neisseria meningitidis

<400> 818
 Met Lys Lys Leu Leu Ile Ala Ala Met Met Ala Ala Ala Leu Ala Ala
 1 5 10 15
 Cys Ser Gln Glu Ala Lys Gln Glu Val Lys Glu Ala Val Gln Ala Val
 20 25 30
 Glu Ser Asp Val Lys Asp Thr Ala Ala Ser Ala Ala Glu Ser Ala Ala
 35 40 45
 Ser Ala Val Glu Glu Ala Lys Asp Gln Val Lys Asp Ala Ala Ala Asp
 50 55 60
 Ala Lys Ala Ser Ala Glu Glu Ala Val Thr Glu Ala Lys Glu Ala Val
 65 70 75 80

Thr Glu Ala Ala Lys Asp Thr Leu Asn Lys Ala Ala Asp Ala Thr Gln
85 90 95

Glu Ala Ala Asp Lys Met Lys Asp Ala Ala Lys
100 105

<210> 819
<211> 324
<212> DNA
<213> Neisseria meningitidis

<400> 819
atgaaaaaat tattgattgc cgcaatgatg gcggtgcct tggcagcttg ttcgcaagaa 60
gccaaacagg aggttaagga agcgggtcaa gccgttgagt ccgatgttaa agacactgcg 120
gcttctgccg ccgagtcctgc cgcttctgcc gtcgaagaag cgaaagacca agtcaaagat 180
gctgcggctg atgcaaaggc aagtgccgag gaagctgtaa ctgaagccaa agaagctgta 240
actgaagcag ctaaagatac tttgaacaaa gctgccgacg cgactcagga agcggcagac 300
aaaatgaaag atgccgccaa ataa 324

<210> 820
<211> 107
<212> PRT
<213> Neisseria meningitidis

<400> 820
Met Lys Lys Leu Leu Ile Ala Ala Met Met Ala Ala Ala Leu Ala Ala
1 5 10 15

Cys Ser Gln Glu Ala Lys Gln Glu Val Lys Glu Ala Val Gln Ala Val
20 25 30

Glu Ser Asp Val Lys Asp Thr Ala Ala Ser Ala Ala Glu Ser Ala Ala
35 40 45

Ser Ala Val Glu Glu Ala Lys Asp Gln Val Lys Asp Ala Ala Ala Asp
50 55 60

Ala Lys Ala Ser Ala Glu Glu Ala Val Thr Glu Ala Lys Glu Ala Val
65 70 75 80

Thr Glu Ala Ala Lys Asp Thr Leu Asn Lys Ala Ala Asp Ala Thr Gln
85 90 95

Glu Ala Ala Asp Lys Met Lys Asp Ala Ala Lys
100 105

<210> 821
<211> 591
<212> DNA
<213> Neisseria gonorrhoeae

<400> 821

atggctgccg tatcgggcgg cggtgcggtc ttcttgataa tgcttccaca tattgcccgc 60

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gttcagcgtc agccgccagc gttcgcccaa gcgtcgggag aaatcggcat tgaagccgcc 120
ggcgaaattg tatcggtctc cgccaagag gttttgcccg acaaacggca cggtgccgaa 180
cgagcgcgtt accgaacggt tttgatggcc gaacgacagg cgcaggttct gttcgctgaa 240
atctttgtta tccaataat gcacgccgcg gctgatgccg ccgtagagga aatgatgcc 300
gcccgcattg atttcgcgcg acacgcccaa gccgtagcgc aaaccgtgtg ccttttgcg 360
caggctgtcg gcggttttcg tccagcttct gcccgc aaat tcaatcgttt tttcggacga 420
agcgttggtt atagcggatt aacaaaaatc aggacaaggc ggcgggccgc aggcagtacg 480
gatggtacgg aaccggttcg cccggtgctt ggacgcctta gggaaccgtt ccctttgagc 540
cggggcgggg caaccgcgtac cggtttttgc tcatccgcc a tattgtgttg a 591

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<210> 822
 <211> 196
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 822
 Met Ala Ala Val Ser Gly Gly Gly Ala Val Phe Leu Ile Met Leu Pro
 1 5 10 15

 His Ile Ala Arg Val Gln Arg Gln Pro Pro Ala Phe Ala Gln Ala Ser
 20 25 30

 Gly Glu Ile Gly Ile Glu Ala Ala Gly Glu Ile Val Ser Ala Ala Ala
 35 40 45

 Gln Glu Val Leu Pro Asp Lys Arg His Gly Ala Glu Arg Ala Arg Tyr
 50 55 60

 Arg Thr Val Leu Met Ala Glu Arg Gln Ala Gln Val Leu Phe Ala Glu
 65 70 75 80

 Ile Phe Val Ile Pro Ile Met His Ala Ala Ala Asp Ala Ala Val Glu
 85 90 95

 Glu Met Met Pro Ala Arg Ile Asp Phe Ala Arg His Ala Gln Ala Val
 100 105 110

 Ala Gln Thr Val Cys Leu Leu Arg Gln Ala Val Gly Gly Phe Arg Pro
 115 120 125

 Ala Ser Ala Arg Lys Phe Asn Arg Phe Phe Gly Arg Ser Val Val Tyr
 130 135 140

 Ser Gly Leu Thr Lys Ile Arg Thr Arg Arg Arg Ala Ala Gly Ser Thr
 145 150 155 160

 Asp Gly Thr Glu Pro Val Arg Pro Val Leu Gly Arg Leu Arg Glu Pro
 165 170 175

 Phe Pro Leu Ser Arg Gly Gly Ala Thr Arg Thr Gly Phe Cys Ser Ser
 180 185 190

 Ala Ile Leu Cys
 195

<210> 823
<211> 482
<212> DNA
<213> Neisseria meningitidis

<400> 823
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taagaggttt tgctcgacaa acggcacgat gccgaacgag cgcgttaccg aacggttttt 120
atagccgaac gacaggcgca ggctctgttc gctgaaatct ttgttatccc aataatgcac 180
gccgccgccc ctgatgccgc cgtagaggaa atgatgcctg cccgcattga tttcgcgcga 240
cacgcctaag ccctagcgca aaccgtgtgc cttttgcggc aggctgtcgg cggttttcgt 300
ccagcttctg cccgcaaatt caatcgttt ttcggacgaa gcgttggtta tagcggatta 360
acaaaaatca ggacaaggca acgaagccgc agacagtaca aatagtagcg aaccgattca 420
cttggtgctt cagcacctta gagaatcggt ctcttttttg ttcacccgct atattgtgtt 480
ga 482

<210> 824
<211> 160
<212> PRT
<213> Neisseria meningitidis

<400> 824
Ala Gln Ala Leu Gly Glu Ile Gly Ile Glu Ala Ala Asp Glu Ile Val
1 5 10 15
Ser Ala Ala Ala Xaa Glu Val Leu Leu Asp Lys Arg His Asp Ala Glu
20 25 30
Arg Ala Arg Tyr Arg Thr Val Phe Ile Ala Glu Arg Gln Ala Gln Ala
35 40 45
Leu Phe Ala Glu Ile Phe Val Ile Pro Ile Met His Ala Ala Ala Ala
50 55 60
Asp Ala Ala Val Glu Glu Met Met Pro Ala Arg Ile Asp Phe Ala Arg
65 70 75 80
His Ala Xaa Ala Leu Ala Gln Thr Val Cys Leu Leu Arg Gln Ala Val
85 90 95
Gly Gly Phe Arg Pro Ala Ser Ala Arg Lys Phe Asn Arg Phe Phe Gly
100 105 110
Arg Ser Val Val Tyr Ser Gly Leu Thr Lys Ile Arg Thr Arg Gln Arg
115 120 125
Ser Ala Asp Ser Thr Asn Ser Thr Glu Pro Ile His Leu Val Leu Gln
130 135 140
His Leu Arg Glu Ser Arg Ser Leu Phe Cys Ser Ser Ala Ile Leu Cys
145 150 155 160

<210> 825
 <211> 583
 <212> DNA
 <213> Neisseria meningitidis

<400> 825
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 gttcagcgtc agccgccagt tcgctcaagc gtcgggagaa atcggcattg aagccgccga 120
 cgaaattgta tcggttgccg cctaagaggt tttgctcgat aaacggcacg atgccgaatg 180
 agcgcgttac tgaacggttt ttatagccga gcgacaggcg caggctctgt tcgctgaaat 240
 ctttgttatc ctaatagtgc acgccgccgc cgctgatgtc tccgtagagg aaatgatgcc 300
 cgcccgcatt gatttcgcgc gacacgcca agccgtagcg caaaccgtgt gccttttgcg 360
 gcaggctgtc ggcggttttc gtccagcttc tgccctgcaa ttcaatcgtt ttttcggacg 420
 aagcgttggt tatagcggat taacaaaaat caggacaagg cgacgaagcg cagacagtac 480
 agatagtacg gaaccgattc acttggtgct tcagcacctt agagaatcgt ctctttgagc 540
 taaggcgagg caacgccgta ctggtttttg ttcattccact ata 583

<210> 826
 <211> 191
 <212> PRT
 <213> Neisseria meningitidis

<400> 826
 Met Ala Val Val Ser Gly Gly Gly Ala Val Phe Leu Ile Thr Leu Pro
 1 5 10 15
 His Ile Ala His Val Gln Arg Gln Pro Pro Xaa Phe Ala Gln Ala Ser
 20 25 30
 Gly Glu Ile Gly Ile Glu Ala Ala Asp Glu Ile Val Ser Ala Ala Ala
 35 40 45
 Glu Val Leu Leu Asp Lys Arg His Asp Ala Glu Ala Arg Tyr Thr Val
 50 55 60
 Phe Ile Ala Glu Arg Gln Ala Gln Ala Leu Phe Ala Glu Ile Phe Val
 65 70 75 80
 Ile Leu Ile Val His Ala Ala Ala Ala Asp Val Ser Val Glu Glu Met
 85 90 95
 Met Pro Ala Arg Ile Asp Phe Ala Arg His Ala Gln Ala Val Ala Gln
 100 105 110
 Thr Val Cys Leu Leu Arg Gln Ala Val Gly Gly Phe Arg Pro Ala Ser
 115 120 125
 Ala Cys Lys Phe Asn Arg Phe Phe Gly Arg Ser Val Val Tyr Ser Gly
 130 135 140
 Leu Thr Lys Ile Arg Thr Arg Arg Arg Ser Ala Asp Ser Thr Asp Ser
 145 150 155 160
 Thr Glu Pro Ile His Leu Val Leu Gln His Leu Arg Glu Ser Ser Leu
 165 170 175

Ala Lys Ala Arg Gln Arg Arg Thr Gly Phe Cys Ser Ser Thr Ile
 180 185 190

<210> 827
 <211> 1173
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 827
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 ttaacttttg tcggcttcgg cgtcagcacg gtttcccatc cgggcgcca ctacatcgtc 120
 caagtgggag acgaaaaaat cagcgagcac tcaatcaaca acgcatgca gaacgagcag 180
 gcggacggcg gcagcccttg gcgcgacgag gtgttccaat ccctgctgca acgcgcctac 240
 ctgaaacagg gcgcgaagct gatgggcatt tcggtttctt ccgaacaaat caagcagatg 300
 attgtggacg atcccaattt ccacgacgca aacggcaaat tcagtcacgc gcttttgagt 360
 caatacctgt cgcaacgcca tatgtctgaa gaccagtttg tcgaagaaat ccgcgatcag 420
 tttgccttgc agaatttggg aagcctcgtc caaaacggcg tattgggtcg cgacgcgcag 480
 gcggaacagc tgatcaggct gacgcaggct aaccgcacca tccgttcgca cactttcaac 540
 cccgacgagt tcacgcccc agtcaaagcg tctgaagccg atttgcagaa attttataat 600
 gcgaacaaaa aagactatct gctgccgcag gcggtcaaat tggaatatgt cgccttgaat 660
 ctgaaggatt ttgcagacaa gcagaccgtc agtgaaacgg aagtgaaaaa tgcgtttgaa 720
 gagcgcggtg gcggtttgcc ggcacatgaa gccaaacctt ctttcgagca ggaaaaagcc 780
 gccgtcgaaa acgaattgaa aatgaaaaag gcggttgccg acttcaacaa ggcaaaaagaa 840
 aagctgggag acgatgcgtt caatcatccc tcctcgcttg ccgaagccgc caaaaacagc 900
 gggttgaaaag tggaaaccca agaaacttgg ctgagcaggc aggacgcaca aatgtccggc 960
 atgcccgaaa acctaataca tgccgtattc agcgacgacg tattgaagaa aaacacaaat 1020
 tccgaagtgc tgaccatcaa cagcgaaacc gcgtgggtcg tccgcgcca agaagtccgc 1080
 gaagaaaaaa acctactgtt tgaagaagcc aaagatgcgg tgcgtcaggc ctatatccgt 1140
 accgaagccg ccaaactttt gaaaacaatg taa 1173

<210> 828
 <211> 390
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 828
 Met Phe His Ser Ile Glu Lys Tyr Arg Thr Pro Ala Gln Val Leu Leu
 1 5 10 15
 Gly Leu Ile Ala Leu Thr Phe Val Gly Phe Gly Val Ser Thr Val Ser
 20 25 30
 His Pro Gly Ala Asp Tyr Ile Val Gln Val Gly Asp Glu Lys Ile Ser
 35 40 45
 Glu His Ser Ile Asn Asn Ala Met Gln Asn Glu Gln Ala Asp Gly Gly
 50 55 60
 Ser Pro Trp Arg Asp Ala Val Phe Gln Ser Leu Leu Gln Arg Ala Tyr
 65 70 75 80
 Leu Lys Gln Gly Ala Lys Leu Met Gly Ile Ser Val Ser Ser Glu Gln
 85 90 95

Ile	Lys	Gln	Met	Ile	Val	Asp	Asp	Pro	Asn	Phe	His	Asp	Ala	Asn	Gly
100						105						110			
Lys	Phe	Ser	His	Ala	Leu	Leu	Ser	Gln	Tyr	Leu	Ser	Gln	Arg	His	Met
115						120						125			
Ser	Glu	Asp	Gln	Phe	Val	Glu	Glu	Ile	Arg	Asp	Gln	Phe	Ala	Leu	Gln
130						135						140			
Asn	Leu	Val	Ser	Leu	Val	Gln	Asn	Gly	Val	Leu	Val	Gly	Asp	Ala	Gln
145						150						155			
Ala	Glu	Gln	Leu	Ile	Arg	Leu	Thr	Gln	Val	Asn	Arg	Thr	Ile	Arg	Ser
			165						170						
His	Thr	Phe	Asn	Pro	Asp	Glu	Phe	Ile	Ala	Gln	Val	Lys	Ala	Ser	Glu
			180						185						
Ala	Asp	Leu	Gln	Lys	Phe	Tyr	Asn	Ala	Asn	Lys	Lys	Asp	Tyr	Leu	Leu
195						200						205			
Pro	Gln	Ala	Val	Lys	Leu	Glu	Tyr	Val	Ala	Leu	Asn	Leu	Lys	Asp	Phe
210						215						220			
Ala	Asp	Lys	Gln	Thr	Val	Ser	Glu	Thr	Glu	Val	Lys	Asn	Ala	Phe	Glu
225						230						235			
Glu	Arg	Val	Ala	Arg	Leu	Pro	Ala	His	Glu	Ala	Lys	Pro	Ser	Phe	Glu
			245						250						
Gln	Glu	Lys	Ala	Ala	Val	Glu	Asn	Glu	Leu	Lys	Met	Lys	Lys	Ala	Val
			260						265						
Ala	Asp	Phe	Asn	Lys	Ala	Lys	Glu	Lys	Leu	Gly	Asp	Asp	Ala	Phe	Asn
275						280						285			
His	Pro	Ser	Ser	Leu	Ala	Glu	Ala	Ala	Lys	Asn	Ser	Gly	Leu	Lys	Val
290						295						300			
Glu	Thr	Gln	Glu	Thr	Trp	Leu	Ser	Arg	Gln	Asp	Ala	Gln	Met	Ser	Gly
305						310						315			
Met	Pro	Glu	Asn	Leu	Ile	Asn	Ala	Val	Phe	Ser	Asp	Asp	Val	Leu	Lys
			325						330						
Lys	Lys	His	Asn	Ser	Glu	Val	Leu	Thr	Ile	Asn	Ser	Glu	Thr	Ala	Trp
			340						345						
Val	Val	Arg	Ala	Lys	Glu	Val	Arg	Glu	Glu	Lys	Asn	Leu	Leu	Phe	Glu
355						360						365			
Glu	Ala	Lys	Asp	Ala	Val	Arg	Gln	Ala	Tyr	Ile	Arg	Thr	Glu	Ala	Ala
370						375						380			
Lys	Leu	Leu	Lys	Thr	Met										
385			390												

<210> 829
 <211> 1156
 <212> DNA
 <213> Neisseria meningitidis

<400> 829
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 caagtgggcg acgaaaaaat cagcgaccac tccatcaaca acgccataca gaacgaacag 180
 gcggacggcg gcggcccttc gccgacgcgg tgttccaatc cctgctgcaa cgcgctacc 240
 tgaaacaggg cgcgaagctg atgggcattt cggtttcttc cgaacaaatc aagcaaatta 300
 tcgtggacga tcccaatttc cagcagcga acggcaaatt cgaccacgcg cttttaaacc 360
 gctacctttc ccaacgccat atgtctgaag accagtttgt cgaagaaatc cgcgatcagt 420
 ttgccttgca gaatttggtg aacctcgctc aaaacggcgt attggtcggc gacgcgcagg 480
 cggacagctg gatcaggctg acacagggtc accgcaaccat ccgttcgcac actttcaacc 540
 ccgacgagtt catcgcccaa gtcaaagtgt ctgaagccga tttgcagaaa ttttataatg 600
 cgaacaaaaa agactatctg ctgccgcagg cgggtcaaatt ggaatatgtc gccttgaatc 660
 tgaaggattt tgcagacaag cagaccgtca gtgaaacgga agtgaaaaat gcatttgaag 720
 agcgcgtggc gcgtttgccg gcaaatgaag ccaaaccctc tttcgagcag gaaaaagccg 780
 ccgtcgaaaa cgaattgaaa atgaaaaagg cggttgccga cttcaacaag gcaaaagaaa 840
 aattgggcga cgatgcgtca accatccttc ytcgcttgcc gaagccgccca aaaacagcgg 900
 tttgaaagtc gaaacccaag aaacttggct gagtaggcag gacgcgcaaa tgtccggtat 960
 gcccgaaaac ctgatcaatg ccgtattcag cgacgcagta ttgaagaaaa aacacaattc 1020
 cgaagtgctg accatcaaca gcgaaaccgc gtgggtcgtc cgcgccaaag aagtcgcgca 1080
 agagaaaacc ctgccgtttg ccgaagccaa agacgcggta cgtcaggctt atatccgtac 1140
 cgaagccgcc aaactt 1156

<210> 830
 <211> 386
 <212> PRT
 <213> Neisseria meningitidis

<400> 830
 Met Phe His Ser Ile Glu Lys Tyr Arg Thr Pro Ala Gln Val Leu Leu
 1 5 10 15
 Gly Leu Ile Ala Leu Thr Phe Val Gly Phe Gly Val Ser Thr Val Ser
 20 25 30
 His Pro Gly Ala Asp Tyr Ile Val Gln Val Gly Asp Glu Lys Ile Ser
 35 40 45
 Asp His Ser Ile Asn Asn Ala Ile Gln Asn Glu Gln Ala Asp Gly Gly
 50 55 60
 Gly Pro Ser Pro Asp Ala Val Phe Gln Ser Leu Leu Gln Arg Ala Tyr
 65 70 75 80
 Leu Lys Gln Gly Ala Lys Leu Met Gly Ile Ser Val Ser Ser Glu Gln
 85 90 95
 Ile Lys Gln Ile Ile Val Asp Asp Pro Asn Phe His Asp Ala Asn Gly
 100 105 110

Lys Phe Asp His Ala Leu Leu Asn Arg Tyr Leu Ser Gln Arg His Met
 115 120 125
 Ser Glu Asp Gln Phe Val Glu Glu Ile Arg Asp Gln Phe Ala Leu Gln
 130 135 140
 Asn Leu Val Asn Leu Val Gln Asn Gly Val Leu Val Gly Asp Ala Gln
 145 150 155 160
 Ala Glu Gln Leu Ile Arg Leu Thr Gln Val Asn Arg Thr Ile Arg Ser
 165 170 175
 His Thr Phe Asn Pro Asp Glu Phe Ile Ala Gln Val Lys Val Ser Glu
 180 185 190
 Ala Asp Leu Gln Lys Phe Tyr Asn Ala Asn Lys Lys Asp Tyr Leu Leu
 195 200 205
 Pro Gln Ala Val Lys Leu Glu Tyr Val Ala Leu Asn Leu Lys Asp Phe
 210 215 220
 Ala Asp Lys Gln Thr Val Ser Glu Thr Glu Val Lys Asn Ala Phe Glu
 225 230 235 240
 Glu Arg Val Ala Arg Leu Pro Ala Asn Glu Ala Lys Pro Ser Phe Glu
 245 250 255
 Gln Glu Lys Ala Ala Val Glu Asn Glu Leu Lys Met Lys Lys Ala Val
 260 265 270
 Ala Asp Phe Asn Lys Ala Lys Glu Lys Leu Gly Asp Asp Ala Val Asn
 275 280 285
 His Pro Ser Ser Leu Ala Glu Ala Ala Lys Asn Ser Gly Leu Lys Val
 290 295 300
 Glu Thr Gln Glu Thr Trp Leu Ser Arg Gln Asp Ala Gln Met Ser Gly
 305 310 315 320
 Met Pro Glu Asn Leu Ile Asn Ala Val Phe Ser Asp Asp Val Leu Lys
 325 330 335
 Lys Lys His Asn Ser Glu Val Leu Thr Ile Asn Ser Glu Thr Ala Trp
 340 345 350
 Val Val Arg Ala Lys Glu Val Arg Glu Glu Lys Thr Leu Pro Phe Ala
 355 360 365
 Glu Ala Lys Asp Ala Val Arg Gln Ala Tyr Ile Arg Thr Glu Ala Ala
 370 375 380
 Lys Leu
 385

<210> 831
 <211> 1158

<212> DNA

<213> *Neisseria meningitidis*

<400> 831

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caagtgggcg acgaaaaaat cagcgaccac tccatcaaca acgccataca gaacgaacag 180
gcggaacgag gcggcccttc gcgcgacgcg gtgttccaat ccctgctaca acgcgcctac 240
ctgaaacagg gcgcgaagct gatgggcatt tcggtttctt ccgaacaaat caagcagatt 300
atcgtggacg atcccaattt ccacgacgca aacggcaaat tcgaccacgc gcttttaaac 360
cgctaccttt cccaacgtca tatgtctgaa gaccagtttg tcgaagaaat ccgcgatcag 420
tttgccttgc agaatttggt aaacctcgtc caaaacggcg tattggtcgg cgacgcgcag 480
gcggaacagc tgatcagggt gacgcaggtc aaccgcacca tccgttcgca cactttcaac 540
cccgcgaat tcatcgccca agtcaaagtg tctgaagccg atttgcagaa gttttataac 600
gcaaacaaaa aagactacct gcttcccaaa gcggtcaaat tggaatatgt cgccttgaat 660
ctgaaagact ttgcagacaa acagaccgtc agcgaacagc aagtgaaaaa tgcgtttgaa 720
gagcgcgtgg cgcgtttgcc ggcaaatgaa gccaaacctt ctttcgagca ggaaaaagcc 780
gccgtcgaaa acgaattgaa aatgaaaaag gcggttgccg acttcaataa ggcaaaagaa 840
aagctgggcg atgacgcgtt caaccatcct tcctcgcttg ccgaagccgc caaaaacagc 900
ggtttgaaag tcgaaaccca agaaacttgg ctgagcaggc aggatgcgca aatgtccggt 960
atgcccgaaa acctgatcaa tgccgtattc agcgacgacg tattgaagaa aaaacacaat 1020
tccgaagtgc tgaccatcaa cagcgaaacc gcgtgggtcg tccgcgcaa agaagtcgc 1080
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accgaagccg ccaaactt                                     1158
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<210> 832

<211> 386

<212> PRT

<213> *Neisseria meningitidis*

<400> 832

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Met Phe His Ser Ile Glu Lys Tyr Arg Thr Pro Ala Gln Val Leu Leu
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Gly Leu Ile Ala Leu Thr Phe Val Gly Phe Gly Val Ser Thr Val Ser
          20                      25                      30

His Pro Gly Ala Asp Tyr Ile Val Gln Val Gly Asp Glu Lys Ile Ser
          35                      40                      45

Asp His Ser Ile Asn Asn Ala Ile Gln Asn Glu Gln Ala Asp Gly Gly
          50                      55                      60

Gly Pro Ser Arg Asp Ala Val Phe Gln Ser Leu Leu Gln Arg Ala Tyr
          65                      70                      75                      80

Leu Lys Gln Gly Ala Lys Leu Met Gly Ile Ser Val Ser Ser Glu Gln
          85                      90                      95

Ile Lys Gln Ile Ile Val Asp Asp Pro Asn Phe His Asp Ala Asn Gly
          100                      105                      110

Lys Phe Asp His Ala Leu Leu Asn Arg Tyr Leu Ser Gln Arg His Met
          115                      120                      125
```

Ser Glu Asp Gln Phe Val Glu Glu Ile Arg Asp Gln Phe Ala Leu Gln
 130 135 140
 Asn Leu Val Asn Leu Val Gln Asn Gly Val Leu Val Gly Asp Ala Gln
 145 150 155 160
 Ala Glu Gln Leu Ile Arg Leu Thr Gln Val Asn Arg Thr Ile Arg Ser
 165 170 175
 His Thr Phe Asn Pro Asp Glu Phe Ile Ala Gln Val Lys Val Ser Glu
 180 185 190
 Ala Asp Leu Gln Lys Phe Tyr Asn Ala Asn Lys Lys Asp Tyr Leu Leu
 195 200 205
 Pro Lys Ala Val Lys Leu Glu Tyr Val Ala Leu Asn Leu Lys Asp Phe
 210 215 220
 Ala Asp Lys Gln Thr Val Ser Glu Thr Glu Val Lys Asn Ala Phe Glu
 225 230 235 240
 Glu Arg Val Ala Arg Leu Pro Ala Asn Glu Ala Lys Pro Ser Phe Glu
 245 250 255
 Gln Glu Lys Ala Ala Val Glu Asn Glu Leu Lys Met Lys Lys Ala Val
 260 265 270
 Ala Asp Phe Asn Lys Ala Lys Glu Lys Leu Gly Asp Asp Ala Phe Asn
 275 280 285
 His Pro Ser Ser Leu Ala Glu Ala Ala Lys Asn Ser Gly Leu Lys Val
 290 295 300
 Glu Thr Gln Glu Thr Trp Leu Ser Arg Gln Asp Ala Gln Met Ser Gly
 305 310 315 320
 Met Pro Glu Asn Leu Ile Asn Ala Val Phe Ser Asp Asp Val Leu Lys
 325 330 335
 Lys Lys His Asn Ser Glu Val Leu Thr Ile Asn Ser Glu Thr Ala Trp
 340 345 350
 Val Val Arg Ala Lys Glu Val Arg Glu Glu Lys Thr Leu Pro Phe Ala
 355 360 365
 Glu Ala Lys Asp Ala Val Arg Gln Ala Tyr Ile Arg Thr Glu Ala Ala
 370 375 380
 Lys Leu
 385

<210> 833

<211> 1539

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 833

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caagtgggcg acgaaaaaat cagcgagcac tcaatcaaca acgccatgca gaacgagcag 180
gcggacggcg gcagcccttg gcgcgacgcg gtgttccaat ccctgctgca acgcgcctac 240
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attgtggacg atcccaatct ccacgacgca aacggcaaat tcagtcacgc gcttttgagt 360
caatacctgt cgcaacgcca tatgtctgaa gaccagtttg tcgaagaaat ccgcgatcag 420
tttgcccttg agaatttggg aagcctcgtc caaaacggcg tattggtcgg cgacgcgcag 480
gcggaacagc tgatcaggct gacgcaggtc aaccgcacca tccgttcgca cactttcaac 540
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cccgacgagt tcatcgccca agtcaaagcg tctgaagccg atttgcagaa attttataat 600
gcgaacaaaa aagactatct gctgccgcag gcggtcaaat tggaatatgt cgccttgaat 660
ctgaaggatt ttgcagacaa gcagaccgtc agtgaaacgg aagtgaaaaa tgcgtttgaa 720
gagcgcggtg cgcgtttgcc ggcacatgaa gccaaacctt ctttcgagca ggaaaaagcc 780
gccgtcgaaa acgaattgaa aatgaaaaag gcggttgccg acttcaacaa ggcaaaagaa 840
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tccgaagtgc tgaccatcaa cagcgaaacc gcgtgggtcg tccgcgccaa agaagtccgc 1080
gaagaaaaaa acctactgtt tgaagaagcc aaagatgcgg tgcgtcaggc ctatatccgt 1140
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ggcaaggcag ttgacgtgaa atggtcggaa gtgtccgttt tgggcgcgca gcaggcaagg 1260
cagtccatgc cgcccgaggc ttatgcggaa ctgctgaaag caaaaccggc aaacggcaaa 1320
ccgcctatg tcagactgac cggctctgccg gcacccgtga ttgtcgaggc gcaggcagtc 1380
acgcctccgg aggatattgc cgcacagctt cctcctgcga aacaggcttt ggcgcaacag 1440
cagtctgcca atactttcga cctgctgatc cgctatttca acggaaaaat caaacagact 1500
aaaggagcac aatcggttga caacggcgat ggtcagtaa 1539
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<210> 834

<211> 512

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 834

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Met Phe His Ser Ile Glu Lys Tyr Arg Thr Pro Ala Gln Val Leu Leu
  1               5               10               15
```

```
Gly Leu Ile Ala Leu Thr Phe Val Gly Phe Gly Val Ser Thr Val Ser
      20               25               30
```

```
His Pro Gly Ala Asp Tyr Ile Val Gln Val Gly Asp Glu Lys Ile Ser
      35               40               45
```

```
Glu His Ser Ile Asn Asn Ala Met Gln Asn Glu Gln Ala Asp Gly Gly
      50               55               60
```

```
Ser Pro Trp Arg Asp Ala Val Phe Gln Ser Leu Leu Gln Arg Ala Tyr
      65               70               75               80
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```
Leu Lys Gln Gly Ala Lys Leu Met Gly Ile Ser Val Ser Ser Glu Gln
      85               90               95
```

```
Ile Lys Gln Met Ile Val Asp Asp Pro Asn Phe His Asp Ala Asn Gly
      100              105              110
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Lys	Phe	Ser	His	Ala	Leu	Leu	Ser	Gln	Tyr	Leu	Ser	Gln	Arg	His	Met	115	120	125
Ser	Glu	Asp	Gln	Phe	Val	Glu	Glu	Ile	Arg	Asp	Gln	Phe	Ala	Leu	Gln	130	135	140
Asn	Leu	Val	Ser	Leu	Val	Gln	Asn	Gly	Val	Leu	Val	Gly	Asp	Ala	Gln	145	150	155
Ala	Glu	Gln	Leu	Ile	Arg	Leu	Thr	Gln	Val	Asn	Arg	Thr	Ile	Arg	Ser	165	170	175
His	Thr	Phe	Asn	Pro	Asp	Glu	Phe	Ile	Ala	Gln	Val	Lys	Ala	Ser	Glu	180	185	190
Ala	Asp	Leu	Gln	Lys	Phe	Tyr	Asn	Ala	Asn	Lys	Lys	Asp	Tyr	Leu	Leu	195	200	205
Pro	Gln	Ala	Val	Lys	Leu	Glu	Tyr	Val	Ala	Leu	Asn	Leu	Lys	Asp	Phe	210	215	220
Ala	Asp	Lys	Gln	Thr	Val	Ser	Glu	Thr	Glu	Val	Lys	Asn	Ala	Phe	Glu	225	230	235
Glu	Arg	Val	Ala	Arg	Leu	Pro	Ala	His	Glu	Ala	Lys	Pro	Ser	Phe	Glu	245	250	255
Gln	Glu	Lys	Ala	Ala	Val	Glu	Asn	Glu	Leu	Lys	Met	Lys	Lys	Ala	Val	260	265	270
Ala	Asp	Phe	Asn	Lys	Ala	Lys	Glu	Lys	Leu	Gly	Asp	Asp	Ala	Phe	Asn	275	280	285
His	Pro	Ser	Ser	Leu	Ala	Glu	Ala	Ala	Lys	Asn	Ser	Gly	Leu	Lys	Val	290	295	300
Glu	Thr	Gln	Glu	Thr	Trp	Leu	Ser	Arg	Gln	Asp	Ala	Gln	Met	Ser	Gly	305	310	315
Met	Pro	Glu	Asn	Leu	Ile	Asn	Ala	Val	Phe	Ser	Asp	Asp	Val	Leu	Lys	325	330	335
Lys	Lys	His	Asn	Ser	Glu	Val	Leu	Thr	Ile	Asn	Ser	Glu	Thr	Ala	Trp	340	345	350
Val	Val	Arg	Ala	Lys	Glu	Val	Arg	Glu	Glu	Lys	Asn	Leu	Leu	Phe	Glu	355	360	365
Glu	Ala	Lys	Asp	Ala	Val	Arg	Gln	Ala	Tyr	Ile	Arg	Thr	Glu	Ala	Ala	370	375	380
Lys	Leu	Ala	Glu	Asn	Lys	Ala	Lys	Glu	Val	Leu	Thr	Gln	Leu	Asn	Gly	385	390	395
Gly	Lys	Ala	Val	Asp	Val	Lys	Trp	Ser	Glu	Val	Ser	Val	Leu	Gly	Ala	405	410	415

Gln Gln Ala Arg Gln Ser Met Pro Pro Glu Ala Tyr Ala Glu Leu Leu
 420 425 430
 Lys Ala Lys Pro Ala Asn Gly Lys Pro Ala Tyr Val Arg Leu Thr Gly
 435 440 445
 Leu Pro Ala Pro Val Ile Val Glu Ala Gln Ala Val Thr Pro Pro Glu
 450 455 460
 Asp Ile Ala Ala Gln Leu Pro Pro Ala Lys Gln Ala Leu Ala Gln Gln
 465 470 475 480
 Gln Ser Ala Asn Thr Phe Asp Leu Leu Ile Arg Tyr Phe Asn Gly Lys
 485 490 495
 Ile Lys Gln Thr Lys Gly Ala Gln Ser Val Asp Asn Gly Asp Gly Gln
 500 505 510

<210> 835
 <211> 1539
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 835
 atgttccatt ccatacgaata atacagaacg cccgcccag tccttttggg cctgattgca 60
 ttaaccttcg tcggcttcgg ggtcagcacg gtatcccatc cgggtgccga ctacatcgtc 120
 caagtgggag acgaaaaaat cagcgaccac tccatcaaca acgccatata gaacgaacag 180
 gcggacggcg gcggcccttc gcgcgacgag gtgttccaat ccctgctgca acgcgcctac 240
 ctgaaacagg gcgcgaagct gatgggcatt tcggtttctt ccgaacaaat caagcaaatt 300
 atcgtggacg atcccaattt ccacgacgca aacggcaaatt tcgaccacgc gcttttaaac 360
 cgctaccttt cccaacgccca tatgtctgaa gaccagtttg tcgaagaaat ccgcgatcag 420
 tttgccttgc agaatttggg aaacctcgtc caaaacggcg tattgggtcg cgacgcgcag 480
 gcggaacagc tgatcaggct gacacaggct aaccgcacca tccgttcgca cactttcaac 540
 cccgacgagt tcatacgccta agtcaaagt tctgaagccg atttgcagaa attttataat 600
 gcgaacaaaa aagactatct gctgccgcag gcggtcaaatt tggaatatgt cgccttgaat 660
 ctgaaggatt ttgcagacaa gcagaccgtc agtgaaacgg aagtgaacaaa tgcatttgaa 720
 gagcgcgtgg cgcgttttgc ggcaaatgaa gccaaacctt ctttcgagca ggaaaaagcc 780
 gccgtcgaac acgaattgaa aatgaaaaag gcggttgccg acttcaacaa ggcaaaagaa 840
 aaattgggag acgatgcgtt caaccatcct tcctcgcttg ccgaagccgc caaaaacagc 900
 gggttgaaag tcgaaaccca agaaacttgg ctgagtaggc aggacgcgca aatgtccggt 960
 atgcccgaac acctgatcaa tgccgtattc agcgacgacg tattgaagaa aaaacacaat 1020
 tccgaagtgc tgaccatcaa cagcgaaacc gcgtgggtcg tccgcgcaa agaagtccgc 1080
 gaagagaaaa ccctgccgtt tgccgaagcc aaagacgcgg tacgtcaggc ttatatccgt 1140
 accgaagccg ccaaacttgc cgaaaacaag gcaaaagacg tgcttaccca actgaacggc 1200
 ggcaaggctg ttgacgtgaa atggtcgga gtgtccgttt tgggcgcaca gcaggcaagg 1260
 cagtccatgc cgcgcaggc ttatgcggaa ctgctgaaag caaaaccggc aaacggcaaa 1320
 cccgcctacg tcaggctgat cgggtctgcc gcacccgtga ttgtcgaagt acaggctgta 1380
 accccgcggg atgatatcgc cgcacagctt ccgcttgcaa aacaggcttt ggcgcaacag 1440
 cagtctgcca atactttcga cttgttgata cgttatttca acggcaaaat caaacagacc 1500
 aaaggagcgc aatcggtcga caacggcgac ggtcagtaa 1539

<210> 836
<211> 512
<212> PRT
<213> Neisseria meningitidis

<400> 836
Met Phe His Ser Ile Glu Lys Tyr Arg Thr Pro Ala Gln Val Leu Leu
1 5 10 15
Gly Leu Ile Ala Leu Thr Phe Val Gly Phe Gly Val Ser Thr Val Ser
20 25 30
His Pro Gly Ala Asp Tyr Ile Val Gln Val Gly Asp Glu Lys Ile Ser
35 40 45
Asp His Ser Ile Asn Asn Ala Ile Gln Asn Glu Gln Ala Asp Gly Gly
50 55 60
Gly Pro Ser Arg Asp Ala Val Phe Gln Ser Leu Leu Gln Arg Ala Tyr
65 70 75 80
Leu Lys Gln Gly Ala Lys Leu Met Gly Ile Ser Val Ser Ser Glu Gln
85 90 95
Ile Lys Gln Ile Ile Val Asp Asp Pro Asn Phe His Asp Ala Asn Gly
100 105 110
Lys Phe Asp His Ala Leu Leu Asn Arg Tyr Leu Ser Gln Arg His Met
115 120 125
Ser Glu Asp Gln Phe Val Glu Glu Ile Arg Asp Gln Phe Ala Leu Gln
130 135 140
Asn Leu Val Asn Leu Val Gln Asn Gly Val Leu Val Gly Asp Ala Gln
145 150 155 160
Ala Glu Gln Leu Ile Arg Leu Thr Gln Val Asn Arg Thr Ile Arg Ser
165 170 175
His Thr Phe Asn Pro Asp Glu Phe Ile Ala Gln Val Lys Val Ser Glu
180 185 190
Ala Asp Leu Gln Lys Phe Tyr Asn Ala Asn Lys Lys Asp Tyr Leu Leu
195 200 205
Pro Gln Ala Val Lys Leu Glu Tyr Val Ala Leu Asn Leu Lys Asp Phe
210 215 220
Ala Asp Lys Gln Thr Val Ser Glu Thr Glu Val Lys Asn Ala Phe Glu
225 230 235 240
Glu Arg Val Ala Arg Leu Pro Ala Asn Glu Ala Lys Pro Ser Phe Glu
245 250 255
Gln Glu Lys Ala Ala Val Glu Asn Glu Leu Lys Met Lys Lys Ala Val
260 265 270

Ala Asp Phe Asn Lys Ala Lys Glu Lys Leu Gly Asp Asp Ala Phe Asn
 275 280 285
 His Pro Ser Ser Leu Ala Glu Ala Ala Lys Asn Ser Gly Leu Lys Val
 290 295 300
 Glu Thr Gln Glu Thr Trp Leu Ser Arg Gln Asp Ala Gln Met Ser Gly
 305 310 315 320
 Met Pro Glu Asn Leu Ile Asn Ala Val Phe Ser Asp Asp Val Leu Lys
 325 330 335
 Lys Lys His Asn Ser Glu Val Leu Thr Ile Asn Ser Glu Thr Ala Trp
 340 345 350
 Val Val Arg Ala Lys Glu Val Arg Glu Glu Lys Thr Leu Pro Phe Ala
 355 360 365
 Glu Ala Lys Asp Ala Val Arg Gln Ala Tyr Ile Arg Thr Glu Ala Ala
 370 375 380
 Lys Leu Ala Glu Asn Lys Ala Lys Asp Val Leu Thr Gln Leu Asn Gly
 385 390 395 400
 Gly Lys Ala Val Asp Val Lys Trp Ser Glu Val Ser Val Leu Gly Ala
 405 410 415
 Gln Gln Ala Arg Gln Ser Met Pro Pro Glu Ala Tyr Ala Glu Leu Leu
 420 425 430
 Lys Ala Lys Pro Ala Asn Gly Lys Pro Ala Tyr Val Arg Leu Ile Gly
 435 440 445
 Leu Pro Ala Pro Val Ile Val Glu Val Gln Ala Val Thr Pro Pro Asp
 450 455 460
 Asp Ile Ala Ala Gln Leu Pro Leu Ala Lys Gln Ala Leu Ala Gln Gln
 465 470 475 480
 Gln Ser Ala Asn Thr Phe Asp Leu Leu Ile Arg Tyr Phe Asn Gly Lys
 485 490 495
 Ile Lys Gln Thr Lys Gly Ala Gln Ser Val Asp Asn Gly Asp Gly Gln
 500 505 510

<210> 837
 <211> 1539
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 837
 atgttcatt ccacgaaaa atacagaacg cccgccaag tccttttggg cctgattgca 60
 ttaaccttcg tcggcttcgg ggtcagcacg gtatcccatc cgggtgccga ctacatcgtc 120

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caagtgggcg acgaaaaaat cagcgaccac tccatcaaca acgccataca gaacgaacag 180
gcggacggcg gcggcccttc gcgcgacgcg gtgttccaat cctgctaca acgcgcctac 240
ctgaaacagg gcgcgaagct gatgggcatt tcggtttctt ccgaacaaat caagcagatt 300
atcgtggacg atcccaattt ccacgacgca aacggcaaat tcgaccacgc gcttttaaac 360
cgctaccttt cccaacgtca tatgtctgaa gaccagtttg tcgaagaaat ccgcgatcag 420
tttgcttgac agaatttggg aaacctcgtc caaaacggcg tattggtcgg cgacgcgcag 480
gcggaacagc tgatcaggct gacgcaggtc aaccgcacca tccgttcgca cactttcaac 540
cccgcgaat tcatcgccca agtcaaagtg tctgaagccg atttgcagaa gttttataac 600
gcaaacaaaa aagactacct gcttcccaaa gcggtcaa at tggaatatgt cgccttgaat 660
ctgaaagact ttgcagacaa acagaccgtc agcgaacag aagtgaaaaa tgcgtttgaa 720
gagcgcgtgg cgcgttttgc ggcaaatgaa gccaaacctt ctttcgagca ggaaaaagcc 780
gccgtcgaaa acgaattgaa aatgaaaaag gcggttgccg acttcaataa ggcaaaagaa 840
aagctgggcg atgacgcgtt caaccatcct tcctcgcttg ccgaagccgc caaaaacagc 900
ggtttgaaag tcgaaaccca agaaacttgg ctgagcaggc aggatgcgca aatgtccggt 960
atgcccga aaacctgatcaa tgccgtattc agcgacgacg tattgaagaa aaaacacaat 1020
tccgaagtgc tgaccatcaa cagcgaaacc gcgtgggtcg tccgcgcaa agaagtcgcg 1080
gaagagaaaa ccctgcccgtt tgccgaagcc aaagacgcgg tacgtcaggc ttatatccgt 1140
accgaagccg ccaaaacttg cgaaaacaag gcaaaagacg tgcttaccga actgaacggc 1200
ggcaaggctg ttgacgtgaa atggtcggaa gtgtccgttt tgggcgcaca gcaggcaagg 1260
cagtccatgc cgcgcgaggc ttatgcggaa ctgctgaaag caaaaccggc aaacggcaaa 1320
ccgcctacg tcaggctgat cggctctgcc gcacccgtga ttgtcgaagt acaggctgta 1380
acccgcgcgg atgatatcgc cgcacagctt ccgcttgcaa aacaggcttt ggcgcaacag 1440
cagtctgcca atactttcga cttgttgata cgttatttca acggcaaaat caaacagacc 1500
aaaggagcgc aatcggtcga caacggcgac ggtcagtaa 1539

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<210> 838

<211> 512

<212> PRT

<213> Neisseria meningitidis

<400> 838

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Met Phe His Ser Ile Glu Lys Tyr Arg Thr Pro Ala Gln Val Leu Leu
  1                      5                      10                      15

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```

Gly Leu Ile Ala Leu Thr Phe Val Gly Phe Gly Val Ser Thr Val Ser
                20                      25                      30

```

```

His Pro Gly Ala Asp Tyr Ile Val Gln Val Gly Asp Glu Lys Ile Ser
        35                      40                      45

```

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Asp His Ser Ile Asn Asn Ala Ile Gln Asn Glu Gln Ala Asp Gly Gly
  50                      55                      60

```

```

Gly Pro Ser Arg Asp Ala Val Phe Gln Ser Leu Leu Gln Arg Ala Tyr
  65                      70                      75                      80

```

```

Leu Lys Gln Gly Ala Lys Leu Met Gly Ile Ser Val Ser Ser Glu Gln
                85                      90                      95

```

```

Ile Lys Gln Ile Ile Val Asp Asp Pro Asn Phe His Asp Ala Asn Gly
  100                      105                      110

```

```

Lys Phe Asp His Ala Leu Leu Asn Arg Tyr Leu Ser Gln Arg His Met
  115                      120                      125

```

```

Ser Glu Asp Gln Phe Val Glu Glu Ile Arg Asp Gln Phe Ala Leu Gln

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130	135	140
Asn Leu Val Asn Leu Val Gln Asn Gly Val Leu Val Gly Asp Ala Gln 145 150 155 160		
Ala Glu Gln Leu Ile Arg Leu Thr Gln Val Asn Arg Thr Ile Arg Ser 165 170 175		
His Thr Phe Asn Pro Asp Glu Phe Ile Ala Gln Val Lys Val Ser Glu 180 185 190		
Ala Asp Leu Gln Lys Phe Tyr Asn Ala Asn Lys Lys Asp Tyr Leu Leu 195 200 205		
Pro Lys Ala Val Lys Leu Glu Tyr Val Ala Leu Asn Leu Lys Asp Phe 210 215 220		
Ala Asp Lys Gln Thr Val Ser Glu Thr Glu Val Lys Asn Ala Phe Glu 225 230 235 240		
Glu Arg Val Ala Arg Leu Pro Ala Asn Glu Ala Lys Pro Ser Phe Glu 245 250 255		
Gln Glu Lys Ala Ala Val Glu Asn Glu Leu Lys Met Lys Lys Ala Val 260 265 270		
Ala Asp Phe Asn Lys Ala Lys Glu Lys Leu Gly Asp Asp Ala Phe Asn 275 280 285		
His Pro Ser Ser Leu Ala Glu Ala Ala Lys Asn Ser Gly Leu Lys Val 290 295 300		
Glu Thr Gln Glu Thr Trp Leu Ser Arg Gln Asp Ala Gln Met Ser Gly 305 310 315 320		
Met Pro Glu Asn Leu Ile Asn Ala Val Phe Ser Asp Asp Val Leu Lys 325 330 335		
Lys Lys His Asn Ser Glu Val Leu Thr Ile Asn Ser Glu Thr Ala Trp 340 345 350		
Val Val Arg Ala Lys Glu Val Arg Glu Glu Lys Thr Leu Pro Phe Ala 355 360 365		
Glu Ala Lys Asp Ala Val Arg Gln Ala Tyr Ile Arg Thr Glu Ala Ala 370 375 380		
Lys Leu Ala Glu Asn Lys Ala Lys Asp Val Leu Thr Gln Leu Asn Gly 385 390 395 400		
Gly Lys Ala Val Asp Val Lys Trp Ser Glu Val Ser Val Leu Gly Ala 405 410 415		
Gln Gln Ala Arg Gln Ser Met Pro Pro Glu Ala Tyr Ala Glu Leu Leu 420 425 430		
Lys Ala Lys Pro Ala Asn Gly Lys Pro Ala Tyr Val Arg Leu Ile Gly		

435 440 445
 Leu Pro Ala Pro Val Ile Val Glu Val Gln Ala Val Thr Pro Pro Asp
 450 455 460
 Asp Ile Ala Ala Gln Leu Pro Leu Ala Lys Gln Ala Leu Ala Gln Gln
 465 470 475 480
 Gln Ser Ala Asn Thr Phe Asp Leu Leu Ile Arg Tyr Phe Asn Gly Lys
 485 490 495
 Ile Lys Gln Thr Lys Gly Ala Gln Ser Val Asp Asn Gly Asp Gly Gln
 500 505 510

<210> 839
 <211> 906
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 839
 atgtcaaaac gaaaatccat aaaccgtccg tatcaaaaac cggcgggaact gccgccgttg 60
 caaaataatc cgccatttta ccgtaaaaac cgccgcctga acttttttat cgcggcagac 120
 ggcggttgcg cgtctccgca aaaatgcagg gcgcgcggtt ttcagacggc atttgccgtt 180
 caaggccgtg cgggtgtcttt accaaatgcc caaccattcg cccacggaat ccatccaatc 240
 cttattgccc ccgccgtcc tgctgcccgc gcggtacgcc cacggcgctt gcggtttttt 300
 agctttccac aatcctttgc gttccctttc cgctgaatt tgagcgtcgg catagtcggc 360
 aaaatccgcc ttatcctgct gttcttttagc ataactttta taatgccacg ccgccccgtc 420
 ctgcacctgc atcaggttca aatcggtttt gccggcggat acctgcgcca cttcgcgctg 480
 atagcggtcg gtttcaaaca cacgtacact gactttccta ccctccgccc ccgcgcgcag 540
 gttgtcgcgc gaacgtgtac cgtaagcctg tttcatctcc ggtgcgtcga tatacgccat 600
 ccgaatttta tgtttcgcgc cgtcgcgctc gatgacgtga agggatatcg cgtcatagac 660
 tttggacacc gtgcctgtgt agctgtggcc ggatttcgcc gatgcccgtc gccgaacggg 720
 cgcgtcgaac cccacgtccc ctgcagtgcc gagtacgtcg agtacggcaa ccgccgtccg 780
 caccgcctca ctgtcatatc ccgtataacc caacgcgccc aaaagcgaca ggcgcacggg 840
 aagccatttc atgatttttt taatctgcat atttttcaaa tgccgatgcc gtctgaacat 900
 ctctga 906

<210> 840
 <211> 301
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 840
 Met Ser Lys Arg Lys Ser Ile Asn Arg Pro Tyr Gln Lys Pro Ala Glu
 1 5 10 15
 Leu Pro Pro Leu Gln Asn Asn Pro Pro Phe Tyr Arg Lys Asn Arg Arg
 20 25 30
 Leu Asn Phe Phe Ile Ala Ala Asp Gly Gly Cys Ala Ser Pro Gln Lys
 35 40 45

Cys Arg Ala Arg Gly Phe Gln Thr Ala Phe Ala Val Gln Gly Arg Ala
 50 55 60
 Val Ser Leu Pro Asn Ala Gln Pro Phe Ala His Gly Ile His Pro Ile
 65 70 75 80
 Leu Ile Ala Pro Ala Ala Pro Ala Cys Pro Ala Val Arg Pro Arg Arg
 85 90 95
 Leu Arg Ile Phe Ser Phe Pro Gln Ser Phe Ala Phe Pro Phe Arg Leu
 100 105 110
 Asn Leu Ser Val Gly Ile Val Gly Lys Ile Arg Leu Ile Leu Leu Phe
 115 120 125
 Phe Ser Ile Thr Phe Ile Met Pro Arg Arg Pro Val Leu His Leu His
 130 135 140
 Gln Val Gln Ile Gly Phe Ala Gly Gly Tyr Leu Arg His Phe Ala Leu
 145 150 155 160
 Ile Ala Val Gly Phe Lys His Thr Tyr Thr Asp Phe Pro Thr Leu Arg
 165 170 175
 Arg Arg Ala Gln Val Val Ala Arg Thr Cys Thr Val Ser Leu Phe His
 180 185 190
 Leu Arg Cys Val Asp Ile Arg His Pro Asn Phe Met Phe Arg Ala Val
 195 200 205
 Ala Val Asp Asp Val Lys Gly Ile Ala Val Ile Asp Phe Gly His Arg
 210 215 220
 Ala Cys Val Ala Val Ala Gly Phe Arg Arg Cys Pro Ser Ala Asn Gly
 225 230 235 240
 Arg Val Glu Thr His Val Pro Cys Ser Ala Glu Tyr Val Glu Tyr Gly
 245 250 255
 Asn Arg Arg Pro His Arg Leu Thr Val Ile Ser Arg Ile Thr Gln Arg
 260 265 270
 Ala Gln Lys Arg Gln Gly Asp Gly Lys Pro Phe His Asp Phe Phe Asn
 275 280 285
 Leu His Ile Phe Gln Met Pro Met Pro Ser Glu His Leu
 290 295 300

<210> 841

<211> 222

<212> DNA

<213> *Neisseria meningitidis*

<400> 841

atgtcaaaac gaaaatccat aaaccgtccg tatcaaaaac cggcggaact gccgccgttg 60
 caaaataatc cgccatttta ccgtaaaaac cgccgcctga acttttttat cgcggcagac 120

ggcgggttgcg cgtctccgca aaaatgcagg gcgcgcgggtt ttcagacggc atttgccgtt 180
 caaagccgtg cgggtgtcttt accaaatgcc caaccattcg gc 222

<210> 842
 <211> 74
 <212> PRT
 <213> Neisseria meningitidis

<400> 842
 Met Ser Lys Arg Lys Ser Ile Asn Arg Pro Tyr Gln Lys Pro Ala Glu
 1 5 10 15
 Leu Pro Pro Leu Gln Asn Asn Pro Pro Phe Tyr Arg Lys Asn Arg Arg
 20 25 30
 Leu Asn Phe Phe Ile Ala Ala Asp Gly Gly Cys Ala Ser Pro Gln Lys
 35 40 45
 Cys Arg Ala Arg Gly Phe Gln Thr Ala Phe Ala Val Gln Ser Arg Ala
 50 55 60
 Val Ser Leu Pro Asn Ala Gln Pro Phe Gly
 65 70

<210> 843
 <211> 903
 <212> DNA
 <213> Neisseria meningitidis

<400> 843
 atgtcaaaac gaaaaatccat aaaccgtccg tatcaaaaac cggcgggaact gccgccgttg 60
 caaaataatc cgccatttta cgtataaaaac cgccgcctga acttttttat cngggcagac 120
 ggcgggttgcg cgtctccgca aaaatgcagg gcgcgcgggtt ttcagacggc atttgccgtt 180
 caaagccgtg cgggtgtcttt accaaatgcc caaccattcg cccacggcat ccatccaatc 240
 cttattgccc ccgcccgtcc tgcctgcccg gcggtacgcc cacggcgctt gcggattttt 300
 agctttccac aatccttttg gttccctttc cgctgaatt tgagcgtegg cataatcggc 360
 aaaatccgcc ttatcctgct gttcttttagc ataactttta taatgccacg ccgccccgtc 420
 ctgcacctgc atcaggttca aatcgggtttt gccgacagaa acctgcgcca cttcgcgtg 480
 gttagcggtcg gtgtcgaaca cgcggacgct gactttctcg ccttccgccg ccgcgcgcag 540
 gttgtcgcgc gaacgcgtgc cgtaagcctg tttcatctcc ggcgcgctga tatacgccat 600
 ccggattttg tgtttcgcgc cgtcgccgtc gataacgtga aggggtgtcg cgatcatagac 660
 tttggacacc gtgcctgtgt agcgggtggc ggatttcgcc gatgctcggc ggcgggcggg 720
 cgcgtcggaa cccgcgtccc ctgccgcgcc gagtacgtcg agtacggcaa ccgccgtccg 780
 caccgcctcg ctgccgtacc ccgtataacc caacgcaccc aaaagcgaca aggcgacggg 840
 aagccatttc atgatttttt taatctgcat atttttcaaa tgccgatgcc gtctgaacat 900
 atc 903

<210> 844
 <211> 301
 <212> PRT
 <213> Neisseria meningitidis

<400> 844
 Met Ser Lys Arg Lys Ser Ile Asn Arg Pro Tyr Gln Lys Pro Ala Glu

1	5	10	15
Leu Pro Pro Leu Gln Asn Asn Pro Pro Phe Tyr Arg Lys Asn Arg Arg	20	25	30
Leu Asn Phe Phe Ile Xaa Ala Asp Gly Gly Cys Ala Ser Pro Gln Lys	35	40	45
Cys Arg Ala Arg Gly Phe Gln Thr Ala Phe Ala Val Gln Ser Arg Ala	50	55	60
Val Ser Leu Pro Asn Ala Gln Pro Phe Ala His Gly Ile His Pro Ile	65	70	75
Leu Ile Ala Pro Ala Ala Pro Ala Cys Pro Ala Val Arg Pro Arg Arg	85	90	95
Leu Arg Ile Phe Ser Phe Pro Gln Ser Phe Ala Phe Pro Phe Arg Leu	100	105	110
Asn Leu Ser Val Gly Ile Ile Gly Lys Ile Arg Leu Ile Leu Leu Phe	115	120	125
Phe Ser Ile Thr Phe Ile Met Pro Arg Arg Pro Val Leu His Leu His	130	135	140
Gln Val Gln Ile Gly Phe Ala Asp Arg Asn Leu Arg His Phe Ala Leu	145	150	155
Val Ala Val Gly Val Glu His Ala Asp Ala Asp Phe Pro Ala Phe Arg	165	170	175
Arg Arg Ala Gln Val Val Ala Arg Thr Arg Ala Val Ser Leu Phe His	180	185	190
Leu Arg Arg Val Asp Ile Arg His Pro Asp Phe Val Phe Arg Ala Val	195	200	205
Ala Val Asp Asn Val Lys Gly Val Ala Val Ile Asp Phe Gly His Arg	210	215	220
Ala Cys Val Ala Val Ala Gly Phe Arg Arg Cys Ser Ala Ala Gly Gly	225	230	235
Arg Val Gly Thr Arg Val Pro Cys Arg Ala Glu Tyr Val Glu Tyr Gly	245	250	255
Asn Arg Arg Pro His Arg Leu Ala Ala Val Pro Arg Ile Thr Gln Arg	260	265	270
Thr Gln Lys Arg Gln Gly Asp Gly Lys Pro Phe His Asp Phe Phe Asn	275	280	285
Leu His Ile Phe Gln Met Pro Met Pro Ser Glu His Ile	290	295	300

<210> 845
 <211> 699
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 845
 atgtcaaaac gaaaatccat aaaccgtccg tatcaaaaac cggcggaact gccgccgttg 60
 caaaataatc cgccatttta cgtataaaac cgccgcctga acttttttat cgcggcagac 120
 ggcggttgcg cgtctccgca aaaatgcagg gcgcgcggtt ttcagacggc atttgccgtt 180
 caaggcgcgtg cgggtgtctt accaaatgcc caaccattcg cccacggaat ccatccaatc 240
 cttattgccc ccgccgtccc tgccgtgccg gcggtacgcc cacggcgctt gcggattttt 300
 agctttccac aatcctttgc gttccctttc cgctgaatt tgagcgtcgg catagtcggc 360
 aaaatccgcc ttatcctgct gttcttttagc ataactttta taatgccacg ccgccccgtc 420
 ctgcacctgc atcagggttca aatcggtttt gccggcggat acctgcgcca cttcgcgctg 480
 atagcgggtcg gtttcaaaca cacgtacaat gaggtttcgta ccctccgccg ccgcgcgcag 540
 gttgtcgcgc gaacgtgtac cgtaagcgtg tttcatctcc ggtgcgtcga tatacgccat 600
 ccgaatttta tgtttcgcgc cgtcgccgtc gatgacgtga aggtatcgc cgtcatagac 660
 tttggacacc gtgcctgcgt agctgtggcc ggatttcgc 699

<210> 846
 <211> 233
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 846
 Met Ser Lys Arg Lys Ser Ile Asn Arg Pro Tyr Gln Lys Pro Ala Glu
 1 5 10 15
 Leu Pro Pro Leu Gln Asn Asn Pro Pro Phe Tyr Arg Lys Asn Arg Arg
 20 25 30
 Leu Asn Phe Phe Ile Ala Ala Asp Gly Gly Cys Ala Ser Pro Gln Lys
 35 40 45
 Cys Arg Ala Arg Gly Phe Gln Thr Ala Phe Ala Val Gln Gly Arg Ala
 50 55 60
 Val Ser Leu Pro Asn Ala Gln Pro Phe Ala His Gly Ile His Pro Ile
 65 70 75 80
 Leu Ile Ala Pro Ala Ala Pro Ala Cys Pro Ala Val Arg Pro Arg Arg
 85 90 95
 Leu Arg Ile Phe Ser Phe Pro Gln Ser Phe Ala Phe Pro Phe Arg Leu
 100 105 110
 Asn Leu Ser Val Gly Ile Val Gly Lys Ile Arg Leu Ile Leu Leu Phe
 115 120 125
 Phe Ser Ile Thr Phe Ile Met Pro Arg Arg Pro Val Leu His Leu His
 130 135 140
 Gln Val Gln Ile Gly Phe Ala Gly Gly Tyr Leu Arg His Phe Ala Leu
 145 150 155 160
 Ile Ala Val Gly Phe Lys His Thr Tyr Asn Glu Phe Arg Thr Leu Arg

	165		170		175
Arg Arg Ala Gln Val Val Ala Arg Thr Cys Thr Val Ser Val Phe His					
	180		185		190
Leu Arg Cys Val Asp Ile Arg His Pro Asn Phe Met Phe Arg Ala Val					
	195		200		205
Ala Val Asp Asp Val Lys Gly Ile Ala Val Ile Asp Phe Gly His Arg					
	210		215		220
Ala Cys Val Ala Val Ala Gly Phe Arg					
	225		230		

<210> 847
 <211> 930
 <212> DNA
 <213> Neisseria meningitidis

<400> 847
 atgtcaaaac gaaaatccat aaaccgtccg tatcaaaaac cggcggaact gccgccgttg 60
 caaaataatc cgccatttta ccgtaaaaac cgccgcctga acttttttat cgcggcagac 120
 ggcggttgcg cgtctccgca aaaatgcagg gcgcgcggtt ttcagacggc atttgccgtt 180
 caaagccgtg cgggtgtcttt accaaatgcc caaccattcg cccacggcat ccatccaatc 240
 cttattgccc ccgccgtccc tgccgtctcg gcggtacgcc caccggcgtt gcggattttt 300
 agctttccac aatcctttgc gttccctttc cgccctgaatt tgagcgtcgg cataatcggc 360
 aaaatccgcc ttatcctgct gttcctttagc ataactttta taatgccacg ccgccccgtc 420
 ctgcacctgc atcagggtca aatcggtttt gccgacagaa acctgcgcca cttcgcgctg 480
 gtacgcggtcg gtatcgaaca cgcgcacgct gactttcctg ccttccgccg ccgcgcgcag 540
 gttgtcgcgc gaacgcgtgc cgtaagcctg tttcatctcc ggcgcgctcg tatacgccat 600
 ccggattttg tgtttcgcgc cgtcgccgtc gataacgtga aggggtgtcg cgatcatagac 660
 tttggacacc gtgcctgtgt agcgggtggc ggatttcgcc gatgctcggc ggcgggcggg 720

 cgcgtcggaa ccgcgtccc ctgcgcgcc gagtacgtcg agtacggcaa ccgcgcgtcc 780
 caccgcctcg ctgccgtacc ccgtataacc caacgcaccc aaaagcgaca gggcgacggg 840
 aagccatttc atgatttttt taatctgcat atttttcaa tgccgatgcc gtctgaacat 900
 atcgaatcg gatttcagac ggcattctaa 930

<210> 848
 <211> 309
 <212> PRT
 <213> Neisseria meningitidis

<400> 848
 Met Ser Lys Arg Lys Ser Ile Asn Arg Pro Tyr Gln Lys Pro Ala Glu
 1 5 10 15

 Leu Pro Pro Leu Gln Asn Asn Pro Pro Phe Tyr Arg Lys Asn Arg Arg
 20 25 30

 Leu Asn Phe Phe Ile Ala Ala Asp Gly Gly Cys Ala Ser Pro Gln Lys
 35 40 45

 Cys Arg Ala Arg Gly Phe Gln Thr Ala Phe Ala Val Gln Ser Arg Ala

50	55	60
Val Ser Leu Pro Asn Ala Gln Pro Phe Ala His Gly Ile His Pro Ile 65 70 75 80		
Leu Ile Ala Pro Ala Ala Pro Ala Cys Ser Ala Val Arg Pro Arg Arg 85 90 95		
Leu Arg Ile Phe Ser Phe Pro Gln Ser Phe Ala Phe Pro Phe Arg Leu 100 105 110		
Asn Leu Ser Val Gly Ile Ile Gly Lys Ile Arg Leu Ile Leu Leu Phe 115 120 125		
Phe Ser Ile Thr Phe Ile Met Pro Arg Arg Pro Val Leu His Leu His 130 135 140		
Gln Val Gln Ile Gly Phe Ala Asp Arg Asn Leu Arg His Phe Ala Leu 145 150 155 160		
Val Ala Val Gly Ile Glu His Ala His Ala Asp Phe Pro Ala Phe Arg 165 170 175		
Arg Arg Ala Gln Val Val Ala Arg Thr Arg Ala Val Ser Leu Phe His 180 185 190		
Leu Arg Arg Val Asp Ile Arg His Pro Asp Phe Val Phe Arg Ala Val 195 200 205		
Ala Val Asp Asn Val Lys Gly Val Ala Val Ile Asp Phe Gly His Arg 210 215 220		
Ala Cys Val Ala Val Ala Gly Phe Arg Arg Cys Ser Ala Ala Gly Gly 225 230 235 240		
Arg Val Gly Thr Arg Val Pro Cys Arg Ala Glu Tyr Val Glu Tyr Gly 245 250 255		
Asn Arg Arg Pro His Arg Leu Ala Ala Val Pro Arg Ile Thr Gln Arg 260 265 270		
Thr Gln Lys Arg Gln Gly Asp Gly Lys Pro Phe His Asp Phe Phe Asn 275 280 285		
Leu His Ile Phe Gln Met Pro Met Pro Ser Glu His Ile Gly Ile Gly 290 295 300		
Phe Gln Thr Ala Ser 305		

<210> 849

<211> 930

<212> DNA

<213> Neisseria meningitidis

<400> 849

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atgtcaaaac gaaaatccat aaaccgtccg tatcaaaaac cggcggaact gccgccgttg 60
caaaataatc cgccatttta ccgtaaaaac cgccgcctga acttttttat cgcggcagac 120
ggcggttgcg cgtctccgca aaaatgcagg gcgcgcggtt ttcagacggc atttgccgtt 180
caaagccgtg cgggtgtctt accaaatgcc caaccattcg cccacggcat ccatccaatc 240
cttattgccc ccgccgtcc tgcctgcccg gcggtacgcc caccggcgtt gcggattttt 300
agctttccac aatcctttgc gttccctttc cgcctgaatt tgagcgtcgg cataatcggc 360
aaaatccgcc ttatcctgct gttcttttagc ataactttta taatgccacg ccgcccgcgc 420
ctgcacctgc atcaggttca aatcggtttt gccgacagaa acctgcgcca cttcgcgctg 480
gtagcggtcg gtgtcgaaca cgcggacgct gactttcctg ccttcgcccg ccgcgcgcag 540

gttgctgcgc gaacgcgtgc cgtaagcctg tttcatctcc ggcgcgctcg tatacgccat 600
ccggattttg tgtttcgcgc cgtcgccgct gataacgtga aggggtgcgc cgtcatagac 660
tttgacaccc gtgcctgtgt agcgggtggc ggatttcgcc gatgctcggc ggcgggaggg 720
cgcgctcgaa cccgcgtccc ctgccgcgcc gactacgtcg agtacggcaa ccgccgtccg 780
caccgcctcg ctgccgtacc ccgtataacc caacgcaccc aaaagcgaca aggcgcgcgg 840
aagccatttc atgatttttt taatctgcat atttttcaaa tgccgatgcc gtctgaacat 900
atcggaatcg gattttcagac ggcattcttaa 930

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<210> 850

<211> 309

<212> PRT

<213> Neisseria meningitidis

<400> 850

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Met Ser Lys Arg Lys Ser Ile Asn Arg Pro Tyr Gln Lys Pro Ala Glu
  1             5             10             15

Leu Pro Pro Leu Gln Asn Asn Pro Pro Phe Tyr Arg Lys Asn Arg Arg
      20             25             30

Leu Asn Phe Phe Ile Ala Ala Asp Gly Gly Cys Ala Ser Pro Gln Lys
      35             40             45

Cys Arg Ala Arg Gly Phe Gln Thr Ala Phe Ala Val Gln Ser Arg Ala
      50             55             60

Val Ser Leu Pro Asn Ala Gln Pro Phe Ala His Gly Ile His Pro Ile
      65             70             75             80

Leu Ile Ala Pro Ala Ala Pro Ala Cys Pro Ala Val Arg Pro Arg Arg
      85             90             95

Leu Arg Ile Phe Ser Phe Pro Gln Ser Phe Ala Phe Pro Phe Arg Leu
      100            105            110

Asn Leu Ser Val Gly Ile Ile Gly Lys Ile Arg Leu Ile Leu Leu Phe
      115            120            125

Phe Ser Ile Thr Phe Ile Met Pro Arg Arg Pro Val Leu His Leu His
      130            135            140

Gln Val Gln Ile Gly Phe Ala Asp Arg Asn Leu Arg His Phe Ala Leu
      145            150            155            160

Val Ala Val Gly Val Glu His Ala Asp Ala Asp Phe Pro Ala Phe Arg
      165            170            175

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Arg Arg Ala Gln Val Val Ala Arg Thr Arg Ala Val Ser Leu Phe His
 180 185 190
 Leu Arg Arg Val Asp Ile Arg His Pro Asp Phe Val Phe Arg Ala Val
 195 200 205
 Ala Val Asp Asn Val Lys Gly Val Ala Val Ile Asp Phe Gly His Arg
 210 215 220
 Ala Cys Val Ala Val Ala Gly Phe Arg Arg Cys Ser Ala Ala Gly Gly
 225 230 235 240
 Arg Val Gly Thr Arg Val Pro Cys Arg Ala Glu Tyr Val Glu Tyr Gly
 245 250 255
 Asn Arg Arg Pro His Arg Leu Ala Ala Val Pro Arg Ile Thr Gln Arg
 260 265 270
 Thr Gln Lys Arg Gln Gly Asp Gly Lys Pro Phe His Asp Phe Phe Asn
 275 280 285
 Leu His Ile Phe Gln Met Pro Met Pro Ser Glu His Ile Gly Ile Gly
 290 295 300
 Phe Gln Thr Ala Ser
 305

<210> 851
 <211> 873
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 851
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 ttgggaacgg cggttgccgg cgcgccgcct tatattgtcg ggatactggt tttgctggtc 120
 gccgtcggag gaacggccgg cagcctgttt atgccgtcgg taccgcgcaa ggctgccgat 180
 acccaaatcg agtggaatat tgtccgtggt acaaaaatccc tgctgcgtga aacggtgcgg 240
 cacaatcccg tttttaccgc cattatcggc atctcgtggt tttggtttgt cggcgcgggt 300
 tataccacgc aactgccgac ctttacccaa atccatttgg gcggcaacga taatgttttt 360
 aacctgatgc ttgctttggt ttccatcggg attgccgcgg gttcgggtact gtgtgccaa 420
 ttccgacagg aacggctgat gttggcttgg gtaacgggtg gtgcgttggg ttcgacgggt 480
 tgccggcctg ttttggtgtg gctgacgcac ggacaccgtt ttgaagggtt gaacggcatt 540
 ttttggtttt tatcgcaagg atgggcatac cccgtgatgg cggatgatgac gctgatcggc 600
 tttttcggcg gattttttct cgttcgcgtc tatacctggc tgcaaaccgc cagcagcgag 660
 actttccgcg cccgcgccgt tgccgccaac aatatcgta acggcatctt tatggtttcc 720
 gccgcggttt tgagcgcggt attgctgttt ttgtttgaca gcatttcctt gctgtatctg 780
 attgtgcctt tgggcaatat tccgttggcg gtatttttga ttaagcgcg aaggcggttt 840
 ttaggcgcgg cggcaatcag gaaaaaacct tga 873

<210> 852
 <211> 290
 <212> PRT
 <213> Neisseria gonorrhoeae

[illegible]

<210> 853
 <211> 868
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 853
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 ttgggaacgg cgggtggcagg tgtaccgcct tatattgtcg ggatactggt tttgctgggc 120
 gccgtcggag gcacggtcgg cagcctgttt atgccgtccg taccgcgcaa ggctgccgat 180
 acacaaattg agtggaaatat tgtccgtggc acaaaatccc tgctgcgtga aacgggtcgg 240
 cacaagcccg tttttaccgc cattatcggg atttcgtggg tttggtttgt cggcgcgggt 300
 tataccacgc aactgccgac ctttacccaa atccatctgg gcggcaacga caatgttttc 360
 aacctgatgc ttgctctggt ttccatcggg attgccgcgg gttcgggtact gtgtgccaag 420
 ttcagcakgg aacgcctgat gttggccttg gtaacgggtg gtgcgttggg tttgacgggt 480
 tgccgcttgg ttttgggtg gctgacgcac ggacaccgtt ttgaagggt gaacggcatt 540
 ttttrgtttt tatcgcaagg atgggcatat cccgtgatgg cgggtgatgac gctgatcggc 600
 tttttcggcg gattttttctc cgttccgctc tatacctgtg caaaccgcca tagcgagatt 660
 tccgcgcccg gccgttgccg ccaacaatat cgtaacggg atttttatgg tttccgctgc 720
 cgttttgagc gcggtgttgc tgtttttgtt tgacagcatt tccttgttgt atctgattgt 780
 cgctttgggc aatattccgt tgcgggtatt tttgattaag cgcgaaaggc gggttttagg 840
 cgcgcgcgca atcaggaaaa aaccttga 868

<210> 854
 <211> 288
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 854
 Met Met Gly Asn Ser Leu Ile Glu Ser Gly Thr Phe Val Ala Ile Leu
 1 5 10 15
 Phe Gly Gln Ile Leu Gly Thr Ala Val Ala Gly Val Pro Pro Tyr Ile
 20 25 30
 Val Gly Ile Leu Val Leu Leu Val Ala Val Gly Gly Thr Val Gly Ser
 35 40 45
 Leu Phe Met Pro Ser Val Pro Ala Lys Ala Ala Asp Thr Gln Ile Glu
 50 55 60
 Trp Asn Ile Val Arg Gly Thr Lys Ser Leu Leu Arg Glu Thr Val Arg
 65 70 75 80
 His Lys Pro Val Phe Thr Ala Ile Ile Gly Ile Ser Trp Phe Trp Phe
 85 90 95
 Val Gly Ala Val Tyr Thr Thr Gln Leu Pro Thr Phe Thr Gln Ile His
 100 105 110
 Leu Gly Gly Asn Asp Asn Val Phe Asn Leu Met Leu Ala Leu Phe Ser
 115 120 125
 Ile Gly Ile Ala Ala Gly Ser Val Leu Cys Ala Lys Phe Ser Xaa Glu

130	135	140
Arg Leu Met Leu Ala Trp Val Thr Val Gly Ala Leu Gly Leu Thr Val		
145	150	155 160
Cys Gly Leu Val Leu Val Trp Leu Thr His Gly His Arg Phe Glu Gly		
	165	170 175
Leu Asn Gly Ile Phe Xaa Phe Leu Ser Gln Gly Trp Ala Tyr Pro Val		
	180	185 190
Met Ala Val Met Thr Leu Ile Gly Phe Phe Gly Gly Phe Phe Ser Val		
	195	200 205
Pro Leu Tyr Thr Val Gln Thr Ala Ile Ala Arg Phe Pro Arg Pro Ala		
	210	215 220
Val Ala Ala Asn Asn Ile Val Asn Gly Ile Phe Met Val Ser Ala Ala		
225	230	235 240
Val Leu Ser Ala Val Leu Leu Phe Leu Phe Asp Ser Ile Ser Leu Leu		
	245	250 255
Tyr Leu Ile Val Ala Leu Gly Asn Ile Pro Leu Ser Val Phe Leu Ile		
	260	265 270
Lys Arg Glu Arg Arg Phe Leu Gly Ala Ala Ala Ile Arg Lys Lys Pro		
	275	280 285

<210> 855
 <211> 1311
 <212> DNA
 <213> Neisseria meningitidis

<400> 855
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 gctacgcagt ttctcggcgc gttcaacgac aatgtgttca aaaccgcgct gtttgtgatg 120
 attgggtttt acggttttgg gcaaaacggc ttcttgccctg ccggacagat gttgaacttg 180
 ggcgcggttg tgtttatatt gccgtatttc ctgttttcct cgctgtcggg gcagttgggt 240
 aacaaattcg acaaggccgt tttggcgcgt tgggccaagg tgctggaaat gatcattatg 300
 gcggtggcgg catacgggtt ttatatccgg tctgccccgc tgcttttggc gtgtctgttt 360
 tgcattggcg cgcaatcgac gctgttcggg ccgctgaaat acgccatcct gcccgattat 420
 ctgcacgaca aagagttgat gatgggcaac agcctgattg aatcgggtac gtttgtcgcc 480
 atcctgttcg gtcagatact ggggactgcg gtggcagggtg taccgcctta tattgtcggg 540
 atactggttt tgctggtcgc cgtaggaggc acggtcggca gcctgtttat gccgtccgta 600
 cccgccaaagg ctgccgatac acaaattgag tggaaatattg tccgggggtac aaaatccctg 660
 ctgcgtgaaa cgggtgcggca caagcccgtt tttaccgcca ttatcggtat ttcgtgggtt 720
 tggtttgtcg gcgcgggtta taccacgcaa ctgccgacct ttacccaaat ccatctaggc 780
 ggcaacgaca atgttttcaa cctgatgctt gccctgtttt ccatcggtat tgccgcgggt 840
 tcggtactgt gtgccaagtt cagcagggaa cggtcagggt tggcttgggt aacggttgg 900
 gcgttgggtt tgacgggttt cggcttgggt ttggtgtggc tgacgcacgg acaccgtttt 960
 gaagggtcga acggcatatt ttggttttta tcgcaaggat gggcatatcc cgtgatggcg 1020
 gtgatgacgc tgatcggtt tttcggcgga tttttctccg ttccgctcta tacctggctg 1080

caaacgcgcca gtagcgagac tttccgcgcc cgcgcggttg ccgccaacaa tatcggttaac 1140
 ggtatttttta tggtttccgc tgccgttttg agcgcggtgt tgctgttttt gtttgacagc 1200
 atttccttgt tgtatctgat tgtcgctttg ggcaatattc cgttgtcggt atttttgatt 1260
 aagcgcgaaa ggcggttttt aggcgcggcg gcaatcagga aaaaaccttg a 1311

<210> 856
 <211> 436
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 856
 Met Tyr Ala Lys Lys Gly Gly Leu Gly Leu Val Lys Ser Arg Arg Phe
 1 5 10 15
 Ala Pro Leu Phe Ala Thr Gln Phe Leu Gly Ala Phe Asn Asp Asn Val
 20 25 30
 Phe Lys Thr Ala Leu Phe Val Met Ile Gly Phe Tyr Gly Leu Gly Gln
 35 40 45
 Asn Gly Phe Leu Pro Ala Gly Gln Met Leu Asn Leu Gly Ala Leu Leu
 50 55 60
 Phe Ile Leu Pro Tyr Phe Leu Phe Ser Ser Leu Ser Gly Gln Leu Gly
 65 70 75 80
 Asn Lys Phe Asp Lys Ala Val Leu Ala Arg Trp Ala Lys Val Leu Glu
 85 90 95
 Met Ile Ile Met Ala Val Ala Ala Tyr Gly Phe Tyr Ile Arg Ser Ala
 100 105 110
 Pro Leu Leu Leu Ala Cys Leu Phe Cys Met Gly Ala Gln Ser Thr Leu
 115 120 125
 Phe Gly Pro Leu Lys Tyr Ala Ile Leu Pro Asp Tyr Leu Asp Asp Lys
 130 135 140
 Glu Leu Met Met Gly Asn Ser Leu Ile Glu Ser Gly Thr Phe Val Ala
 145 150 155 160
 Ile Leu Phe Gly Gln Ile Leu Gly Thr Ala Val Ala Gly Val Pro Pro
 165 170 175
 Tyr Ile Val Gly Ile Leu Val Leu Leu Val Ala Val Gly Gly Thr Val
 180 185 190
 Gly Ser Leu Phe Met Pro Ser Val Pro Ala Lys Ala Ala Asp Thr Gln
 195 200 205
 Ile Glu Trp Asn Ile Val Arg Gly Thr Lys Ser Leu Leu Arg Glu Thr
 210 215 220
 Val Arg His Lys Pro Val Phe Thr Ala Ile Ile Gly Ile Ser Trp Phe
 225 230 235 240

Trp Phe Val Gly Ala Val Tyr Thr Thr Gln Leu Pro Thr Phe Thr Gln
 245 250 255
 Ile His Leu Gly Gly Asn Asp Asn Val Phe Asn Leu Met Leu Ala Leu
 260 265 270
 Phe Ser Ile Gly Ile Ala Ala Gly Ser Val Leu Cys Ala Lys Phe Ser
 275 280 285
 Arg Glu Arg Leu Arg Leu Ala Trp Val Thr Val Gly Ala Leu Gly Leu
 290 295 300
 Thr Val Cys Gly Leu Val Leu Val Trp Leu Thr His Gly His Arg Phe
 305 310 315 320
 Glu Gly Leu Asn Gly Ile Phe Trp Phe Leu Ser Gln Gly Trp Ala Tyr
 325 330 335
 Pro Val Met Ala Val Met Thr Leu Ile Gly Phe Phe Gly Gly Phe Phe
 340 345 350
 Ser Val Pro Leu Tyr Thr Trp Leu Gln Thr Ala Ser Ser Glu Thr Phe
 355 360 365
 Arg Ala Arg Ala Val Ala Ala Asn Asn Ile Val Asn Gly Ile Phe Met
 370 375 380
 Val Ser Ala Ala Val Leu Ser Ala Val Leu Leu Phe Leu Phe Asp Ser
 385 390 395 400
 Ile Ser Leu Leu Tyr Leu Ile Val Ala Leu Gly Asn Ile Pro Leu Ser
 405 410 415
 Val Phe Leu Ile Lys Arg Glu Arg Arg Phe Leu Gly Ala Ala Ala Ile
 420 425 430
 Arg Lys Lys Pro
 435

<210> 857
 <211> 690
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 857
 atgaaacgca aaaatatcgc gctgattccc gccgcccggca tcgggggtgcg tttcgggtgcg 60
 gacaaaccca agcaatatgt cgaaatcgga agcaaaaccg ttttagaaca tgtacttggg 120
 atttttgaac ggcatgaggc cgtcgatttg accgtcgttg tcgtctcgcc cgaagacacg 180
 tttgccgata aggttcagac ggcatttcca caggttcggg tgtggaaaaa cgggtggacag 240
 accgcgcgcg aaactgtccg caacgggtgtg gcaaaactgt tggaaaccgg tttggcggcg 300
 gaaaccgaca atattctggt acacgatgcc gcccgctgct gcctgccgtc tgaagctctg 360
 gcgcgggttg tagaacaggc gggcaacgcc gccgaaggcg ggattttggc agttcccgtt 420
 gccgatacgc tcaagcgcgc agaaagcgga caaatcagtg caactgtcga ccgttcgggg 480
 ctttggcagg cgcaaacgcc gcagcttttt caagcgggtt tgctgcaccg cgcatgggct 540
 gcggaaaact tgggcggcat taccgatgaa gcgtccgccg tggaaaaact ggggtgtgcgt 600
 ccgctactga tacagggcga cgcgcgcaat ttgaaactga cgcagccgca ggacgcatac 660

atcgtcaggc tgctgctcaa tgccgtctga

690

<210> 858
<211> 229
<212> PRT
<213> Neisseria gonorrhoeae

<400> 858
Met Lys Arg Lys Asn Ile Ala Leu Ile Pro Ala Ala Gly Ile Gly Val
1 5 10 15
Arg Phe Gly Ala Asp Lys Pro Lys Gln Tyr Val Glu Ile Gly Ser Lys
20 25 30
Thr Val Leu Glu His Val Leu Gly Ile Phe Glu Arg His Glu Ala Val
35 40 45
Asp Leu Thr Val Val Val Val Ser Pro Glu Asp Thr Phe Ala Asp Lys
50 55 60
Val Gln Thr Ala Phe Pro Gln Val Arg Val Trp Lys Asn Gly Gly Gln
65 70 75 80
Thr Arg Ala Glu Thr Val Arg Asn Gly Val Ala Lys Leu Leu Glu Thr
85 90 95
Gly Leu Ala Ala Glu Thr Asp Asn Ile Leu Val His Asp Ala Ala Arg
100 105 110
Cys Cys Leu Pro Ser Glu Ala Leu Ala Arg Leu Ile Glu Gln Ala Gly
115 120 125
Asn Ala Ala Glu Gly Gly Ile Leu Ala Val Pro Val Ala Asp Thr Leu
130 135 140
Lys Arg Ala Glu Ser Gly Gln Ile Ser Ala Thr Val Asp Arg Ser Gly
145 150 155 160
Leu Trp Gln Ala Gln Thr Pro Gln Leu Phe Gln Ala Gly Leu Leu His
165 170 175
Arg Ala Leu Ala Ala Glu Asn Leu Gly Gly Ile Thr Asp Glu Ala Ser
180 185 190
Ala Val Glu Lys Leu Gly Val Arg Pro Leu Leu Ile Gln Gly Asp Ala
195 200 205
Arg Asn Leu Lys Leu Thr Gln Pro Gln Asp Ala Tyr Ile Val Arg Leu
210 215 220
Leu Leu Asn Ala Val
225

<210> 859

<211> 456
 <212> DNA
 <213> Neisseria meningitidis

<400> 859
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 gacaaaccca agcaatatgt cgaaatcgga agcaaaaccg ttttagaaca tacgattggg 120
 atttttgaac ggcatgaggc cgtcgatttg accgtcgttg tcgtctcgcc cgaagacacg 180
 tttgccgata aggttcagac ggcattttcca caggttcggg tgtggaaaaa cggcggacag 240
 acccgcgccg aaaccgtccg caacgggtgtg gcaaaactgt tggaaaccgg tttggcggcg 300
 gaaaccgaca atattctggt acacgatgcc gcgcgttgct gcctgccgtc tgaagctttg 360
 acgcggttga tagaacaggc gggcaacgcc gccgaaggcg ggattttggc aattcccatt 420
 gccgatacgc tcaagtgcgc ggacgggtggg aacatt 456

<210> 860
 <211> 152
 <212> PRT
 <213> Neisseria meningitidis

<400> 860
 Met Lys Arg Lys Asn Ile Ala Leu Ile Pro Ala Ala Gly Ile Gly Ala
 1 5 10 15
 Arg Phe Gly Ala Asp Lys Pro Lys Gln Tyr Val Glu Ile Gly Ser Lys
 20 25 30
 Thr Val Leu Glu His Thr Ile Gly Ile Phe Glu Arg His Glu Ala Val
 35 40 45
 Asp Leu Thr Val Val Val Val Ser Pro Glu Asp Thr Phe Ala Asp Lys
 50 55 60
 Val Gln Thr Ala Phe Pro Gln Val Arg Val Trp Lys Asn Gly Gly Gln
 65 70 75 80
 Thr Arg Ala Glu Thr Val Arg Asn Gly Val Ala Lys Leu Leu Glu Thr
 85 90 95
 Gly Leu Ala Ala Glu Thr Asp Asn Ile Leu Val His Asp Ala Ala Arg
 100 105 110
 Cys Cys Leu Pro Ser Glu Ala Leu Thr Arg Leu Ile Glu Gln Ala Gly
 115 120 125
 Asn Ala Ala Glu Gly Gly Ile Leu Ala Ile Pro Ile Ala Asp Thr Leu
 130 135 140
 Lys Cys Ala Asp Gly Gly Asn Ile
 145 150

<210> 861
 <211> 690
 <212> DNA
 <213> Neisseria meningitidis

<400> 861

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atgaagcgca aaaatatcgc gctgattccc gccgccggca tcggggcgcg tttcggtgcg 60
gacaaaccga agcaatatgt cgaaatcgga agcaaaaccg ttttagaaca tacgattggg 120
atTTTTgaac ggcatgaggc cgtcgatttg accgtcgttg tcgtctcgcc cgaagacacg 180
tttgccgata aggttcagac ggcatttcca caggttcggg tgtggaaaaa cggcggacag 240
accgcgccc aaactgtccg caacggtgtg gcaaaattgt tggaaccgg tttggcggcg 300
gaaaccgaca atattctggt acacgatgcc gcgcgttgct gcctgccgtc tgaagctttg 360
acgcggttga tagaacaggc gggcaacgct gccgaagggt ggattttggc aattcccgtt 420
gccgatacgc tcaagtgcgc ggacggtggg aacattagt caaccgtcga gcggacgagc 480
ctttggcagg cgcaaaccgc gcagcttttc cgcgccgggc tgctgcaccg cgcattggct 540
gcggaaaact tggacggcat taccgatgaa gcgtccgccg tggaaaaatt gggcatccgc 600
cctttgctgg tgcagggcga cgcgcgcaat ttgaaactga cgcagccgca ggacgcatac 660
atcgtcaggc tgctgctcga tgccgtctga 690
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<210> 862

<211> 229

<212> PRT

<213> Neisseria meningitidis

<400> 862

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Met Lys Arg Lys Asn Ile Ala Leu Ile Pro Ala Ala Gly Ile Gly Ala
  1             5             10             15

Arg Phe Gly Ala Asp Lys Pro Lys Gln Tyr Val Glu Ile Gly Ser Lys
          20             25             30

Thr Val Leu Glu His Thr Ile Gly Ile Phe Glu Arg His Glu Ala Val
      35             40             45

Asp Leu Thr Val Val Val Val Ser Pro Glu Asp Thr Phe Ala Asp Lys
  50             55             60

Val Gln Thr Ala Phe Pro Gln Val Arg Val Trp Lys Asn Gly Gly Gln
  65             70             75             80

Thr Arg Ala Glu Thr Val Arg Asn Gly Val Ala Lys Leu Leu Glu Thr
      85             90             95

Gly Leu Ala Ala Glu Thr Asp Asn Ile Leu Val His Asp Ala Ala Arg
    100             105             110

Cys Cys Leu Pro Ser Glu Ala Leu Thr Arg Leu Ile Glu Gln Ala Gly
    115             120             125

Asn Ala Ala Glu Gly Gly Ile Leu Ala Ile Pro Val Ala Asp Thr Leu
    130             135             140

Lys Cys Ala Asp Gly Gly Asn Ile Ser Ala Thr Val Glu Arg Thr Ser
    145             150             155             160

Leu Trp Gln Ala Gln Thr Pro Gln Leu Phe Arg Ala Gly Leu Leu His
    165             170             175

Arg Ala Leu Ala Ala Glu Asn Leu Asp Gly Ile Thr Asp Glu Ala Ser
    180             185             190
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Ala Val Glu Lys Leu Gly Ile Arg Pro Leu Leu Val Gln Gly Asp Ala
195 200 205

Arg Asn Leu Lys Leu Thr Gln Pro Gln Asp Ala Tyr Ile Val Arg Leu
210 215 220

Leu Leu Asp Ala Val
225

<210> 863
<211> 672
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 863
atgaaaaccg tttccgccgc catcgctttt gccgcccgtg ccgttttact gaccggctgt 60
gcgaccgagt cctcacgcag cctcgagggt gcaaaaagtc cctcctgcaa tacgcaatat 120
cacggtgttc gcaccccgat ttccgtcggg acattcgaca accgctccag cttccaaaaa 180
ggcattttct ccgacagtga agaccgtctg ggcagccagg caaaaaccat cctggtaaca 240
cacctgcaac aaaccaaccg cttcaacgta ctgaaccgca ccaaccttag cgcattgaaa 300
caggaatccg gcatttcggg caaagcgcag aacctgaaag gcgcagatta tgctgttacc 360
ggcgatgtaa ccgaattcgg acgcagagat gtcggcgatc atcagctctt cggcattttg 420
ggtcgcggca aatcgcaaat cgcctatgca aaagtggctc tgaatatcgt caacgtcaat 480
acttccgaaa tcgtctattc cacacagggc gcgggcgaat acgcactttc caaccgcgaa 540
atcatcggtt tcggcggcac ttccggctac gatgcgactt tgaacggcaa agtttttagac 600
ttggcaatcc gcgaagccgt cgacaacttg gttcaggctg tcgacaacgg cgcattggcaa 660
tccaaccggt aa 672

<210> 864
<211> 223
<212> PRT
<213> *Neisseria gonorrhoeae*

<400> 864
Met Lys Thr Val Ser Ala Ala Ile Ala Phe Ala Ala Ala Ala Val Ser
1 5 10 15
Leu Thr Gly Cys Ala Thr Glu Ser Ser Arg Ser Leu Glu Val Ala Lys
20 25 30
Val Ala Ser Cys Asn Thr Gln Tyr His Gly Val Arg Thr Pro Ile Ser
35 40 45
Val Gly Thr Phe Asp Asn Arg Ser Ser Phe Gln Lys Gly Ile Phe Ser
50 55 60
Asp Ser Glu Asp Arg Leu Gly Ser Gln Ala Lys Thr Ile Leu Val Thr
65 70 75 80
His Leu Gln Gln Thr Asn Arg Phe Asn Val Leu Asn Arg Thr Asn Leu
85 90 95
Ser Ala Leu Lys Gln Glu Ser Gly Ile Ser Gly Lys Ala Gln Asn Leu
100 105 110

Lys Gly Ala Asp Tyr Val Val Thr Gly Asp Val Thr Glu Phe Gly Arg
115 120 125

Arg Asp Val Gly Asp His Gln Leu Phe Gly Ile Leu Gly Arg Gly Lys
130 135 140

Ser Gln Ile Ala Tyr Ala Lys Val Ala Leu Asn Ile Val Asn Val Asn
145 150 155 160

Thr Ser Glu Ile Val Tyr Ser Thr Gln Gly Ala Gly Glu Tyr Ala Leu
165 170 175

Ser Asn Arg Glu Ile Ile Gly Phe Gly Gly Thr Ser Gly Tyr Asp Ala
180 185 190

Thr Leu Asn Gly Lys Val Leu Asp Leu Ala Ile Arg Glu Ala Val Asp
195 200 205

Asn Leu Val Gln Ala Val Asp Asn Gly Ala Trp Gln Ser Asn Arg
210 215 220

<210> 865

<211> 164

<212> DNA

<213> *Neisseria meningitidis*

<400> 865

ggcgcgggcg aatacgcaact ttccaaccgt gaaatcatcg gtttcggcgg cacttccggc 60
tacgatgcga ctttgaacgg caaagtttta gacttggcaa tccgcgaagc gtcaacagcc 120
tggttcaggc tgttgacaac ggcgcatggc aacccaaccg ttaa 164

<210> 866

<211> 54

<212> PRT

<213> *Neisseria meningitidis*

<400> 866

Gly Ala Gly Glu Tyr Ala Leu Ser Asn Arg Glu Ile Ile Gly Phe Gly
1 5 10 15

Gly Thr Ser Gly Tyr Asp Ala Thr Leu Asn Gly Lys Val Leu Asp Leu
20 25 30

Ala Ile Arg Glu Ala Val Asn Ser Leu Val Gln Ala Val Asp Asn Gly
35 40 45

Ala Trp Gln Pro Asn Arg
50

<210> 867

<211> 399

<212> DNA

<213> *Neisseria meningitidis*

<400> 867

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aaccgcacct atttgaacgc attaaaacag gaatccggca tttccggcaa agcgcataac 60
ctgaaaggcg caaattatgt cgnnaccggc gatgtaaccg aattcggacg canagatgtc 120
ggcgatcatc agctcttcgg cattttgggt cgcggcaa atcgcaa atcgctatgcaaaa 180
gtggctctga atatcgtaaa cgtcaatact tccgaaatcg tctattccgc acagggcgcg 240
ggcgaatacg cactttccaa ccgtgaaatc atcggtttcg gcggcacttc cggctacgat 300
gcgactttga acggcaaagt tttagacttg gcaatccgcg aagccgtcaa cagcctggtt 360
caggctgttg acaacggcgc atggcaaccc aaccgttaa 399
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<210> 868

<211> 132

<212> PRT

<213> Neisseria meningitidis

<400> 868

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Asn Arg Thr Tyr Leu Asn Ala Leu Lys Gln Glu Ser Gly Ile Ser Gly
  1           5           10           15

Lys Ala His Asn Leu Lys Gly Ala Asn Tyr Val Xaa Thr Gly Asp Val
          20           25           30

Thr Glu Phe Gly Arg Xaa Asp Val Gly Asp His Gln Leu Phe Gly Ile
  35           40           45

Leu Gly Arg Gly Lys Ser Gln Ile Ala Tyr Ala Lys Val Ala Leu Asn
  50           55           60

Ile Val Asn Val Asn Thr Ser Glu Ile Val Tyr Ser Ala Gln Gly Ala
  65           70           75           80

Gly Glu Tyr Ala Leu Ser Asn Arg Glu Ile Ile Gly Phe Gly Gly Thr
          85           90           95

Ser Gly Tyr Asp Ala Thr Leu Asn Gly Lys Val Leu Asp Leu Ala Ile
  100           105           110

Arg Glu Ala Val Asn Ser Leu Val Gln Ala Val Asp Asn Gly Ala Trp
  115           120           125

Gln Pro Asn Arg
  130
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<210> 869

<211> 648

<212> DNA

<213> Neisseria gonorrhoeae

<400> 869

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atgaaacctt tgatttttagg gcttgccgcc gtgttggtc tgtctgcctg ccaagttcga 60
aaagctcccg acctcgacta cacgtcattc aaagaaagca aaccggcttc aattttggtg 120
gttccgccgc tgaacgagtc gcctgatgtc aacggcactt gggggatgct ggcttcgacc 180
gccgcgccga tttccgaagc cggctattac gtctttcccg ccgcagtcgt ggaggaaacc 240
ttcaaagaaa acggcttgac caatgccgcc gatattcacg ccgtccggcc ggaaaaactg 300
catcaaat ttcggcaatga tgcggttttg tacattacgg ttaccgaata cggcacttca 360
tatcaaat tagacagcgt gacgaccgta tccgccaaag cacggctggt cgattccgcg 420
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aacgggaaag agttgtgggtc gggttcggcc agcatccgcg aaggcagcaa caacagcaac 480
 agcggcctgt tgggggcttt ggtcggcgca gtgggtcaatc agattgcca cagcctgacc 540
 gaccgcgggtt atcaggtttc caaaaccgcc gcatacaacc tactgtcgcg ctattcccgc 600
 aacgggtatct tgaaagggtcc gagattcgtc gaagagcagc ccaaataa 648

<210> 870
 <211> 215
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 870
 Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15
 Cys Gln Val Arg Lys Ala Pro Asp Leu Asp Tyr Thr Ser Phe Lys Glu
 20 25 30
 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45
 Asp Val Asn Gly Thr Trp Gly Met Leu Ala Ser Thr Ala Ala Pro Ile
 50 55 60
 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80
 Phe Lys Glu Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95
 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110
 Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Gly Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser Arg Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 871
 <211> 648

<212> DNA

<213> *Neisseria meningitidis*

<400> 871

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atgaaacctt tgatttttagg gcttgccgcc gtgttggcgc tgtctgcctg ccaagttcaa 60
aaagcgcccg atttcgacta cacgtcattc aaggaaagca aaccggcttc aattttggtg 120
gttccgcccgc tgaacgaatc gcccgatgtc aacggaacat ggggtgtact ggcttcgacc 180
gccgcgccgc tttccgaagc cggctattac gtcttccccg ccgcagtcgt ggaggaaacc 240
ttcaaacaaa acggcttgac caatgccgcc gatattcacg ccgtccggcc ggaaaaactg 300
catcagattt tcggcaatga tgcggttttg tacattacgg ttaccgaata cggcacttca 360
tatcaaattt tagacagcgt gacgaccgta tccgccaaag cacggctggt cgattcccgc 420
aacggaaaag agttgtggtc gggttcggcc agcatccgcg aaggcagcaa caacagcaac 480
agcggcctgt tgggggcttt ggtcagcgca gtggtcaatc agattgcaa cagcctgacc 540
gaccgcggtt atcaggtttc caaaaccgcc gcatacaacc tgctgtcgcc ctattctcac 600
aacggcatct tgaaggtcc gagattcggt gaagagcagc ccaaataa 648
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<210> 872

<211> 215

<212> PRT

<213> *Neisseria meningitidis*

<400> 872

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Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1             5             10             15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
      20             25             30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
      35             40             45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
      50             55             60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
      65             70             75             80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
      85             90             95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
      100            105            110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
      115            120            125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
      130            135            140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
      145            150            155            160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
      165            170            175
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Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205

Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 873
 <211> 648
 <212> DNA
 <213> Neisseria meningitidis

<400> 873
 atgaaacctt tgatttttagg gcttgccgcc gtgttggcgc tgtctgcctg ccaagttcaa 60
 aaagcgcccg atttcgacta cacgtcattc aaggaaagca aaccggcttc aattttggtg 120
 gttccgcccgc tgaacgaatc gcccgatgtc aacggaacat ggggtgtact ggcttcgacc 180
 gccgcgccgc tttccgaagc cggctattac gtcttccccg ccgcagtcgt ggaggaaacc 240
 ttcaaacaaa acggcttgac caatgccgcc gatattcacg ccgtccggcc ggaaaaactg 300

 catcagattt tcggcaatga tgcggttttg tacattacgg ttaccgaata cggcacttca 360
 tatcaaattt tagacagcgt gacgaccgta tccgccaaag cacggctggt cgattcccgc 420
 aacggaaaag agttgtggtc gggttcggcc agcatccgcg aaggcagcaa caacagcaac 480
 agcggcctgt tgggggcttt ggtcagcgca gtggtcaatc agattgcca cagcctgacc 540
 gaccgcggtt atcaggtttc taaaaccgcc gcatacaacc tgctgtcgcc ctattctcac 600
 aacggcatct tgaaaggtcc gagattcgtc gaagagcagc ccaaataa 648

<210> 874
 <211> 215
 <212> PRT
 <213> Neisseria meningitidis

<400> 874
 Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
 1 5 10 15

 Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
 20 25 30

 Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
 35 40 45

 Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
 50 55 60

 Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
 65 70 75 80

 Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
 85 90 95

 Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
 100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
 115 120 125
 Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
 130 135 140
 Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
 145 150 155 160
 Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
 165 170 175
 Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
 180 185 190
 Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
 195 200 205
 Phe Val Glu Glu Gln Pro Lys
 210 215

<210> 875
 <211> 1038
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 875
 atggcgcggtt tcgccttctc cgccgacatt ctccgcacag cgtttgcaga cggtttcata 60
 acctgcaacc gcgcccacat cgcgggtgta atgccagcag cgttcgcat tttcgccgtc 120
 gctggctttg gcggcaacgg caagtcatc accgactttc acttctgctt tagacaccag 180
 cagggcaaaag cgcaattctt cgcccaaagc attcagatag ccggccattt cttccggcgc 240
 ggtaatttcg gcttcgcctt gcaaggacga accgacagtt ttgtcggcgc gcaaaggctc 300
 gatagcggcg gttactgctt cgcgcgcttc gcggattgcc gtccattttt tcaccagttc 360
 ggcttcggct ttttcgttga tggccgggaa ctctgtgcaa gtatggaaga ggacgctgtc 420
 ttcttcgccg ccgccgatga tgtcccacgc ttcttcgccg gtgaagcaca aaatcgggtc 480
 aatcaagaga accaggctgc gcgtgatgtg gtacaggcgc gtttgcgcgc tgcggcgggc 540
 gcggctgtcg gctttggtgg tgtagaggcg gtctttcagg atgtcgaggt agaacgcgcc 600
 caagtcttcc gagcagaaag aaacaatgtc ttacacggcg aagtggaaag catagcgcgg 660
 atagtaaccg cctgccaaac gctcttgtag ccgcccgcgc aataccaagg cgtagcggtc 720
 gatttccacc atatccgcct gttgcacggc atcttcaatc ggattaaagt cgctcaaatt 780
 ggcaaacagg aagctcaagg tattgcggat gcggcggtag ctttcggtta cgcgtttgag 840
 gatttctttg gaaatcgcca attcgccgct gtaatcggtg gatgccgcc acaggcgcag 900
 gatgtccgcg ccgaattcgt tatagacttc ctgcggcgcg acgacgttgc cgatggattt 960
 cgacattttg cggccgtttt ggtcaaccac gaaaccgtgg gtcagcagct gtttatacgg 1020
 tgcgcgtccc atggatga 1038

<210> 876
 <211> 345
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 876
 Met Ala Arg Phe Ala Phe Ser Ala Asp Ile Leu Arg Thr Ala Phe Ala
 1 5 10 15

Asp	Gly	Phe	Ile	Thr	Cys	Asn	Arg	Ala	His	Ile	Ala	Gly	Val	Met	Pro		
			20					25					30				
Ala	Ala	Phe	Ala	Phe	Phe	Ala	Val	Ala	Gly	Phe	Gly	Gly	Asn	Gly	Lys		
		35					40					45					
Phe	Ile	Thr	Asp	Phe	His	Phe	Cys	Phe	Arg	His	Gln	Gln	Gly	Lys	Ala		
	50					55					60						
Gln	Phe	Phe	Ala	Gln	Ser	Ile	Gln	Ile	Ala	Gly	His	Phe	Phe	Arg	Arg		
	65				70					75					80		
Gly	Asn	Phe	Gly	Phe	Arg	Leu	Gln	Gly	Arg	Thr	Asp	Ser	Phe	Val	Gly		
				85					90					95			
Ala	Gln	Arg	Leu	Asp	Ser	Gly	Gly	Tyr	Cys	Phe	Ala	Arg	Phe	Ala	Asp		
			100					105					110				
Cys	Arg	Pro	Phe	Phe	His	Gln	Phe	Gly	Phe	Gly	Phe	Phe	Val	Asp	Gly		
		115					120						125				
Arg	Glu	Leu	Val	Pro	Ser	Met	Glu	Glu	Asp	Ala	Val	Phe	Phe	Ala	Ala		
	130					135					140						
Ala	Asp	Asp	Val	Pro	Arg	Phe	Phe	Ala	Gly	Glu	Ala	Gln	Asn	Arg	Cys		
	145				150					155					160		
Asn	Gln	Glu	Asn	Gln	Ala	Ala	Arg	Asp	Val	Val	Gln	Gly	Gly	Leu	Arg		
				165					170					175			
Ala	Ala	Ala	Gly	Ala	Ala	Val	Gly	Phe	Gly	Gly	Val	Glu	Ala	Val	Phe		
			180					185					190				
Gln	Asp	Val	Glu	Val	Glu	Arg	Ala	Gln	Val	Phe	Arg	Ala	Glu	Arg	Asn		
		195					200					205					
Asn	Val	Phe	His	Gly	Glu	Val	Glu	Gly	Ile	Ala	Arg	Ile	Val	Thr	Ala		
	210					215					220						
Cys	Gln	Thr	Leu	Leu	Gln	Pro	Pro	Arg	Gln	Tyr	Gln	Gly	Val	Ala	Val		
225					230				235							240	
Asp	Phe	His	His	Ile	Arg	Leu	Leu	His	Gly	Ile	Phe	Asn	Arg	Ile	Lys		
				245					250					255			
Val	Ala	Gln	Ile	Gly	Lys	Gln	Glu	Ala	Gln	Gly	Ile	Ala	Asp	Ala	Ala		
			260					265					270				
Val	Ala	Phe	Gly	Asn	Ala	Phe	Glu	Asp	Phe	Phe	Gly	Asn	Arg	Gln	Phe		
		275					280					285					
Ala	Ala	Val	Ile	Gly	Gly	Cys	Arg	Pro	Gln	Ala	Gln	Asp	Val	Arg	Ala		
		290				295					300						
Glu	Phe	Val	Ile	Asp	Phe	Leu	Arg	Arg	Asp	Asp	Val	Ala	Asp	Gly	Phe		

305 310 315 320
Arg His Phe Ala Ala Val Leu Val Asn His Glu Thr Val Gly Gln Gln
 325 330 335

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<210> 877
<211> 777
<212> DNA
<213> Neisseria meningitidis
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<400>	877						
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gatggtcggg	aactcgtgcc	aagtatggaa	gaggacgctg	tckttcttcg	cgccgcgwt	180	
gaygtccac	gcttcttcgc	cggtgaagca	caaaatcgg	gcaatcaaga	gaaccaaact	240	
gcgtgtgatg	tgatacagg	cagtttgtgc	gctgcggcgt	gcatggctgt	ctgctttggt	300	
ggtgtagagg	cggtctttca	ggatgtcgag	gtagaacgca	cccaagtctt	ccgagcagaa	360	
agaaacartg	tcttttacgg	caaagtggaa	kgcataaccg	ggatagtaat	cgctgccag	420	
acactcttgc	agctgacgtg	ccaataccac	ggcgtagcgg	tcgattttcca	ccatatccgc	480	
ctgttgcacg	gcattctcaa	tcggattaaa	gtcgtctcaag	ttggcaaaca	aaaagctcaa	540	
ggtattgcgg	atacggcgg	agcttttcggt	tacgcgtttg	aggattttctt	tggaaatcgc	600	
caattgcgcg	ctgtaatcgg	tagatgcgcg	ccacaggcgc	aggatgtctg	cgccgaatcc	660	
gtataaaacc	tcttgcggtg	caacgacggt	ccgcatggat	ttcgacattt	ttttgccttc	720	
gccgtcgaca	acgaaaccat	gggtcacgag	ctgtttatag	ggcgcgcgac	ccatttga	777	

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<210> 878
<211> 258
<212> PRT
<213> Neisseria meningitidis
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<400> 878
Leu His Gly Arg Thr Asp Gly Phe Val Gly Ala Gln Arg Leu Asp Gly
   1                               5                   10           15

Gly Gly Tyr Arg Phe Ala Gly Phe Ala Asp Cys Arg Pro Phe Phe His
                20                          25                      30

Gln Phe Gly Phe Gly Phe Phe Val Asp Gly Arg Glu Leu Val Pro Ser
      35                                40                        45

Met Glu Glu Asp Ala Val Xaa Phe Ala Ala Ala Xaa Asp Val Pro Arg
    50                            55                             60

Phe Phe Ala Gly Glu Ala Gln Asn Arg Cys Asn Gln Glu Asn Gln Thr
  65                    70                         75              80

Ala Cys Asp Val Ile Gln Gly Ser Leu Cys Ala Ala Ala Cys Met Ala
                              85                                90          95

Val Cys Phe Gly Gly Val Glu Ala Val Phe Gln Asp Val Glu Val Glu
        100                     105                 110
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Arg Thr Gln Val Phe Arg Ala Glu Arg Asn Xaa Val Phe Tyr Gly Lys
 115 120 125

Val Glu Xaa Ile Thr Arg Ile Val Ile Ala Cys Gln Thr Leu Leu Gln
 130 135 140

Leu Thr Cys Gln Tyr His Gly Val Ala Val Asp Phe His His Ile Arg
 145 150 155 160

Leu Leu His Gly Ile Phe Asn Arg Ile Lys Val Ala Gln Val Gly Lys
 165 170 175

Gln Lys Ala Gln Gly Ile Ala Asp Thr Ala Val Ala Phe Gly Tyr Ala
 180 185 190

Phe Glu Asp Phe Phe Gly Asn Arg Gln Phe Ala Ala Val Ile Gly Arg
 195 200 205

Cys Arg Pro Gln Ala Gln Asp Val Cys Ala Glu Phe Val Ile Asn Leu
 210 215 220

Leu Arg Cys Asn Asp Val Ala Asp Gly Phe Arg His Phe Phe Ala Phe
 225 230 235 240

Ala Val Asp Asn Glu Thr Met Gly Gln Gln Leu Phe Ile Arg Arg Ala
 245 250 255

Thr His

<210> 879
 <211> 1035
 <212> DNA
 <213> Neisseria meningitidis

<400> 879
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 gcctgcaacc gcgcccacat cgcgggtgta gtgccagcag cgttcgcat tttcaccatc 120
 actggcttta gcggcaacgg caagtctgct gcctactttc acttctgctt tagacaccag 180
 caaagcaaag cgcaattctt cgcccaaagc attcagatag ccggccattt cttccggcgc 240
 ggtaatttcg gtttcgggctt gcaaggacga accgacggtt ttgtcggcgc gcaaaggctc 300
 gatggcggcg gttaccgctt cgcgggcttc gcggattgcc gtccattttt tcaccagttc 360
 ggcttcggct ttttcggtga tggtcgggaa ctctgcca gtatggaaaa gcacgctgtc 420
 ttctgcgcgc ccgcgatga tgtcccacgc ttcttcgccg gtgaagcaca aaatcgggtc 480
 aatcaagaga accaggctgc gcgtgatgtg gtacaggggc gtttgcgcgc tgcggcgggc 540
 gcggctgtcg gotttgggtg tatagaggcg gtctttcagg atatcgaggt agaacgcgcc 600
 caagtcttcc gagcagaaag aaaccatttc tttcacggca aagtggaaag cataacgcgg 660
 ataaaaatca ccggcaacgc gttcttgacg ccgccttgcc aacaccaagg catagcggtc 720
 gatttccacc atatccgcct gttgcacggc atcttcaata ggattgaagt cgctcaagtt 780
 ggcaaacaaa aagctcaagg tattgcgat acggcggtag ctttcggtta cgcgcttgag 840
 gatctctttg gaaatcgcca attcgcgct gtaatcggtg gatgcgccc acaggcgcag 900
 gatgtccgcg ccgaactcgt tatacattc ttgcggcgcg acgacgttgc cgatggattt 960
 cgacattttg cgccggtttt gatccaccac gaaaccatgg gtcagcagct gtttgtacgg 1020
 cgcgcgaccc attga 1035

<210> 880
<211> 344
<212> PRT
<213> Neisseria meningitidis

<400> 880

Met	Ala	Arg	Phe	Ala	Phe	Ser	Ala	Asp	Ile	Leu	Cys	Thr	Ala	Phe	Ala
1				5					10					15	
Asp	Gly	Phe	Met	Ala	Cys	Asn	Arg	Ala	His	Ile	Ala	Gly	Val	Val	Pro
			20					25					30		
Ala	Ala	Phe	Ala	Phe	Phe	Thr	Ile	Thr	Gly	Phe	Ser	Gly	Asn	Gly	Lys
			35				40					45			
Phe	Ala	Ala	Tyr	Phe	His	Phe	Cys	Phe	Arg	His	Gln	Gln	Ser	Lys	Ala
			50				55				60				
Gln	Phe	Phe	Ala	Gln	Ser	Ile	Gln	Ile	Ala	Gly	His	Phe	Phe	Arg	Arg
					70					75					80
Gly	Asn	Phe	Gly	Phe	Gly	Leu	Gln	Gly	Arg	Thr	Asp	Gly	Phe	Val	Gly
				85					90					95	
Ala	Gln	Arg	Leu	Asp	Gly	Gly	Gly	Tyr	Arg	Phe	Ala	Gly	Phe	Ala	Asp
			100					105					110		
Cys	Arg	Pro	Phe	Phe	His	Gln	Phe	Gly	Phe	Gly	Phe	Phe	Val	Asp	Gly
			115					120					125		
Arg	Glu	Leu	Val	Pro	Ser	Met	Glu	Lys	His	Ala	Val	Phe	Cys	Ala	Ala
			130				135					140			
Ala	Asp	Asp	Val	Pro	Arg	Phe	Phe	Ala	Gly	Glu	Ala	Gln	Asn	Arg	Cys
					150					155					160
Asn	Gln	Glu	Asn	Gln	Ala	Ala	Arg	Asp	Val	Val	Gln	Gly	Gly	Leu	Arg
				165					170					175	
Ala	Ala	Ala	Gly	Ala	Ala	Val	Gly	Phe	Gly	Gly	Ile	Glu	Ala	Val	Phe
			180					185					190		
Gln	Asp	Ile	Glu	Val	Glu	Arg	Ala	Gln	Val	Phe	Arg	Ala	Glu	Arg	Asn
			195				200					205			
His	Phe	Phe	His	Gly	Lys	Val	Glu	Gly	Ile	Thr	Arg	Ile	Lys	Ile	Thr
			210				215				220				
Gly	Asn	Ala	Phe	Leu	Gln	Pro	Pro	Cys	Gln	His	Gln	Gly	Ile	Ala	Val
					230					235					240
Asp	Phe	His	His	Ile	Arg	Leu	Leu	His	Gly	Ile	Phe	Asn	Arg	Ile	Glu
				245					250					255	
Val	Ala	Gln	Val	Gly	Lys	Gln	Lys	Ala	Gln	Gly	Ile	Ala	Asp	Thr	Ala

260

265

270

Val Ala Phe Gly Tyr Ala Leu Glu Asp Phe Phe Gly Asn Arg Gln Phe
 275 280 285

Ala Ala Val Ile Gly Gly Cys Arg Pro Gln Ala Gln Asp Val Arg Ala
 290 295 300

Glu Leu Val Ile His Phe Leu Arg Arg Asp Asp Val Ala Asp Gly Phe
 305 310 315 320

Arg His Phe Ala Pro Val Leu Ile His His Glu Thr Met Gly Gln Gln
 325 330 335

Leu Phe Val Arg Arg Ala Thr His
 340

<210> 881

<211> 1149

<212> DNA

<213> Neisseria gonorrhoeae

<400> 881

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 aggattgtcg ataaattcgt tacccttacc gccgaaaagc agcctgccgt ccgcgctgag 180
 gcggttaataa tccaaaatat ggcggttggt gcatactgcc atattgttgc ggataagccc 240
 ttttgtgcgc gcgccaagg gttcggtggc aataataaag gtgctgacgg caatcgctt 300
 gcgttccaaa ggccggaata tcgggttcaa accgacataa gtattgacgg catagaccac 360
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 gatgcgcgtc atcggggatt gctcgaaaat ctgcgcgcgg gcttcggcag cggcgctggc 480
 aacacccaac gtgtaattga gcggatgaag atgcccggac aagggatcga actgtgcgcc 540
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<210> 882

<211> 382

<212> PRT

<213> Neisseria gonorrhoeae

<400> 882

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Ala	Asp	Lys	Leu	Gly	His	Thr	Arg	Arg	Ile	Val	Asp	Lys	Phe	Val	Ile	
		35					40					45				
Leu	Thr	Ala	Glu	Lys	Gln	Pro	Ala	Val	Arg	Ala	Glu	Ala	Val	Ile	Ile	
		50			55						60					
Gln	Asn	Met	Ala	Val	Val	Ala	Tyr	Cys	His	Ile	Val	Ala	Asp	Lys	Pro	
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Phe	Cys	Ala	Arg	Ala	Gln	Gly	Phe	Gly	Gly	Asn	Asn	Lys	Gly	Ala	Asp	
				85					90							
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		100						105					110			
Ile	Ser	Ile	Asp	Gly	Ile	Asp	His	Ile	Phe	Thr	Leu	Asp	Ala	Ala	Phe	
		115					120					125				
Gly	Arg	Val	Asn	Gln	Pro	Thr	Val	Leu	Ile	Arg	Phe	Asp	Ala	Arg	His	
		130			135						140					
Arg	Gly	Leu	Leu	Glu	Asn	Leu	Arg	Ala	Gly	Phe	Gly	Ser	Gly	Ala	Gly	
145					150					155						160
Asn	Thr	Gln	Arg	Val	Ile	Glu	Arg	Met	Lys	Met	Pro	Gly	Gln	Gly	Ile	
				165					170					175		
Glu	Leu	Cys	Ala	Leu	Val	His	Ile	Ala	Val	Lys	Leu	Leu	Phe	Gln	Leu	
		180						185					190			
Gly	Phe	Ile	Pro	Lys	Leu	Ile	Met	Thr	Arg	Thr	Val	Met	Pro	Leu	Gly	
		195					200					205				
Val	Phe	Met	Pro	Leu	Leu	Gln	Leu	Phe	Pro	Met	Leu	Arg	Thr	Asp	Gly	
		210			215						220					
Asn	Arg	Gly	Ile	Thr	Ala	Leu	Pro	Ile	Ala	Ile	Asp	Gly	Met	Phe	Ala	
				225		230				235				240		
Asp	Ala	Phe	Val	His	Gln	Phe	Asp	Arg	Leu	Gln	Arg	Leu	Leu	Pro	Lys	
				245					250					255		
Pro	Leu	Arg	Leu	Leu	Gln	Ala	Asp	Leu	Phe	Phe	Asn	Phe	Pro	His	Thr	
		260						265					270			
Ala	Gly	Val	Val	Ala	Asp	Asn	Leu	Pro	Ala	Thr	Pro	Ala	Gly	Arg	Ala	
		275				280						285				
Glu	Ala	Asp	Thr	Cys	Gly	Phe	Gln	Asn	Asp	Gly	Phe	Met	Ser	Val	Phe	
		290			295						300					
Arg	Gln	Arg	Gln	Cys	Gly	Thr	Gln	Thr	Ala	Gln	Thr	Ala	Ala	Asp	Asn	
305					310					315					320	

Ala Gly Phe Gly Phe Gln Thr Ala Leu Glu Phe Arg Ile Asn Ser Met
325 330 335

Arg Ile Asn Arg Thr Lys Ile Ile Arg Arg Gln Ile Phe Leu Lys Ile
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Arg Ala Asn His Cys Val Cys Phe Ile Gly Tyr Ile Phe Gly Arg Asn
355 360 365

Asp Thr Asp Cys Arg Ala Ile Ser Ser Lys Gln Lys Ile Gly
370 375 380

<210> 883
<211> 1149
<212> DNA
<213> Neisseria meningitidis

<400> 883
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gcggtataata tccaaaatat ggcggttgct gcatactgcc atattgttac ggataagccc 240
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gcgttccaaa ggccggaata tcgggttcaa acctgcataa gtattgacag catagaccac 360
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gatgcacgtc atcggggatt gtcgaaaaat ctgcgacacc gcttcggcag cggcacgagc 480
gatgcccaaa gtgtaagtga gcgcatgcag gtgtccgat aaggggtcga attgtgcccc 540
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actcgacccg taatgccgtt ggccgtgttc atgccactgc tgcaactctt cccaatgctg 660
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<210> 884
<211> 382
<212> PRT
<213> Neisseria meningitidis

<400> 884
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Ala Asp Lys Leu Gly His Thr Leu Arg Ile Val Asp Lys Leu Val Ile
35 40 45

Leu Thr Ala Glu Lys Gln Ser Ala Val Arg Ala Glu Ala Val Ile Ile

50	55	60
Gln Asn Met Ala Val Val Ala Tyr Cys His Ile Val Thr Asp Lys Pro 65 70 75 80		
Phe Cys Ala Arg Pro Gln Gly Phe Gly Arg Asn Asn Lys Gly Ala Asp 85 90 95		
Ser Asn Arg Leu Ala Phe Gln Arg Pro Glu Tyr Arg Val Gln Thr Cys 100 105 110		
Ile Ser Ile Asp Ser Ile Asp His Ile Phe Ala Leu Asp Ala Ala Phe 115 120 125		
Gly Arg Val Asn Gln Pro Thr Val Leu Met Arg Phe Asp Ala Arg His 130 135 140		
Arg Gly Leu Leu Glu Asn Leu Arg Thr Gly Phe Gly Ser Gly Thr Ser 145 150 155 160		
Asp Ala Gln Ser Val Ser Glu Arg Met Gln Val Ser Gly Xaa Gly Val 165 170 175		
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Gly Phe Ile Pro Lys Leu Ile Met Thr Arg Thr Val Met Pro Leu Gly 195 200 205		
Val Phe Met Pro Leu Leu Gln Leu Phe Pro Met Leu Arg Thr Asp Gly 210 215 220		
Asn Arg Gly Ile Thr Ala Leu Pro Ile Thr Ile Asp Gly Met Phe Ala 225 230 235 240		
Asp Ala Phe Val His Gln Phe Asp Arg Leu Gln Arg Leu Leu Pro Lys 245 250 255		
Pro Leu Arg Leu Leu Gln Ala Asp Leu Phe Phe Asn Phe Pro His Thr 260 265 270		
Ala Xaa Val Ile Ala Asp Asn Leu Pro Ala Thr Pro Ser Arg Arg Ala 275 280 285		
Glu Thr Asp Thr Arg Gly Phe Gln His Asn Arg Phe Met Ser Leu Leu 290 295 300		
Arg Gln Gly Gln Cys Ser Ala Gln Thr Thr Gln Ser Ala Ala Asp Asp 305 310 315 320		
Thr Gly Ile Gly Phe Gln Thr Ala Leu Lys Phe Arg Ile Asn Ser Met 325 330 335		
Arg Ile Asn Arg Thr Glu Ile Ile Arg Arg Gln Ile Phe Leu Lys Ile 340 345 350		
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355

360

365

Asp Thr Gly Cys Arg Ala Ile Ser Ser Xaa Gln Lys Ile Gly
 370 375 380

<210> 885

<211> 1149

<212> DNA

<213> Neisseria meningitidis

<400> 885

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<210> 886

<211> 382

<212> PRT

<213> Neisseria meningitidis

<400> 886

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Met Arg Asp Lys Val Gly Gly Asn Val Ala Leu Pro Ala Pro Arg Ile
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Phe Asp Phe Asp Ile Gly Lys Leu Arg Lys Asn Phe Lys His Ile Leu
  20              25             30

Ala Asp Lys Leu Gly His Thr Arg Gly Ile Val Asp Lys Leu Val Ile
  35              40             45

Leu Thr Ala Glu Lys Gln Ser Ala Val Arg Ala Glu Ala Val Ile Ile
  50              55             60

Gln Asn Met Thr Val Val Ala Tyr Cys His Ile Val Ala Asp Lys Pro
  65              70             75             80

Phe Cys Thr Arg Ala Gln Gly Phe Cys Gly Asn Asn Lys Gly Ala Asp
  85              90             95

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Ser Asn Arg Leu Ala Leu Gln Arg Leu Glu Tyr Arg Ile Gln Thr Gly
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 Ile Ser Ile Asp Gly Val His Gln Ile Phe Ala Phe Asp Ala Ala Phe
 115 120 125
 Gly Gly Val Asn Gln Pro Thr Val Leu Ile Arg Phe Asn Ala Tyr His
 130 135 140
 Gly Arg Met Leu Lys Asn Leu Arg Thr Ser Phe Gly Ser Gly Ala Gly
 145 150 155 160
 Asp Ala Gln Arg Val Ile Glu Arg Met Glu Met Pro Gly Gln Gly Ile
 165 170 175
 Glu Leu Cys Ala Leu Val His Ile Ala Val Lys Leu Leu Leu Gln Phe
 180 185 190
 Ser Val Ile Pro Glu Leu Ile Met Ser Cys Thr Val Ile Phe Leu Gly
 195 200 205
 Val Leu Met Pro Leu Leu Gln Phe Phe Pro Met Leu Arg Thr Asp Gly
 210 215 220
 Asn Arg Gly Ile Thr Ala Leu Pro Ile Ala Ile Asn Gly Met Phe Ala
 225 230 235 240
 Asp Ala Phe Val His Gln Phe Asp Arg Leu Gln Arg Leu Leu Pro Lys
 245 250 255
 Pro Leu Arg Leu Leu Gln Thr Asp Leu Phe Phe Asn Phe Leu His Thr
 260 265 270
 Ala Gly Val Ile Ala Asp Asn Leu Pro Ala Thr Pro Ser Arg Arg Ala
 275 280 285
 Glu Thr Asp Thr Arg Gly Phe Gln His Asn Arg Phe Met Ser Leu Leu
 290 295 300
 Arg Gln Gly Gln Cys Ser Ala Gln Thr Thr Gln Ser Ala Ala Asp Asp
 305 310 315 320
 Thr Gly Ile Gly Phe Gln Thr Ala Leu Lys Phe Arg Ile Asn Ser Met
 325 330 335
 Arg Ile Asn Arg Thr Glu Ile Ile Arg Arg Gln Ile Phe Leu Lys Ile
 340 345 350
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 370 375 380

<211> 1497
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 887
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<210> 888
 <211> 498
 <212> PRT
 <213> *Neisseria gonorrhoeae*

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 Leu Arg Asp Asp Met Gln Ala Lys His Tyr Glu Pro Gly Gly Lys Tyr
 35 40 45
 His Leu Phe Gly Asn Ala Arg Gly Ser Val Lys Asn Arg Val Cys Ala
 50 55 60
 Val Gln Thr Phe Asp Ala Thr Ala Val Gly Pro Ile Leu Pro Ile Thr
 65 70 75 80
 His Glu Arg Thr Gly Phe Glu Gly Val Ile Gly Tyr Glu Thr His Phe
 85 90 95
 Ser Gly His Gly His Glu Val His Ser Pro Phe Asp Asn His Asp Ser

100	105	110
Lys Ser Thr Ser Asp Phe Ser Gly Gly Val Asp Gly Gly Phe Thr Val		
115	120	125
Tyr Gln Leu His Arg Thr Gly Ser Glu Ile His Pro Ala Asp Gly Tyr		
130	135	140
Asp Gly Pro Gln Gly Gly Gly Tyr Pro Glu Pro Gln Gly Ala Arg Asp		
145	150	155
Ile Tyr Ser Tyr His Ile Lys Gly Thr Ser Thr Lys Thr Lys Ile Asn		
165	170	175
Thr Val Pro Gln Ala Pro Phe Ser Asp Arg Trp Leu Lys Glu Asn Ala		
180	185	190
Gly Ala Ala Ser Gly Phe Leu Ser Arg Ala Asp Glu Ala Gly Lys Leu		
195	200	205
Ile Trp Glu Asn Asp Pro Asp Lys Asn Trp Arg Ala Asn Arg Met Asp		
210	215	220
Asp Ile Arg Gly Ile Val Gln Gly Ala Val Asn Pro Phe Leu Thr Gly		
225	230	235
Phe Gln Gly Val Gly Ile Gly Ala Ile Thr Asp Ser Ala Val Ser Pro		
245	250	255
Val Thr Asp Thr Ala Ala Gln Gln Thr Leu Gln Gly Ile Asn Asp Leu		
260	265	270
Gly Asn Leu Ser Pro Glu Ala Gln Leu Ala Ala Ala Ser Leu Leu Gln		
275	280	285
Asp Ser Ala Phe Ala Val Lys Asp Gly Ile Asn Ser Ala Arg Gln Trp		
290	295	300
Ala Asp Ala His Pro Asn Ile Thr Ala Thr Ala Gln Thr Ala Leu Ala		
305	310	315
Val Ala Glu Ala Ala Gly Thr Val Trp Arg Gly Lys Lys Val Glu Leu		
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Asn Pro Thr Lys Trp Asp Trp Val Lys Asn Thr Gly Tyr Lys Lys Pro		
340	345	350
Ala Ala Arg His Met Gln Thr Val Asp Gly Glu Met Ala Gly Gly Asn		
355	360	365
Arg Pro Pro Lys Ser Ile Thr Ser Glu Gly Lys Ala Asn Ala Ala Thr		
370	375	380
Tyr Pro Lys Leu Val Asn Gln Leu Asn Glu Gln Asn Leu Asn Asn Ile		
385	390	395
Ala Ala Gln Asp Pro Arg Leu Ser Leu Ala Ile His Glu Gly Lys Lys		

405

410

415

Asn Phe Pro Ile Gly Thr Ala Thr Tyr Glu Glu Ala Asp Arg Leu Gly
 420 425 430

Lys Ile Trp Val Gly Glu Gly Ala Arg Gln Thr Ser Gly Gly Gly Trp
 435 440 445

Leu Ser Arg Asp Gly Thr Arg Gln Tyr Arg Pro Pro Thr Glu Lys Lys
 450 455 460

Ser Gln Phe Ala Thr Thr Gly Ile Gln Ala Asn Phe Glu Thr Tyr Thr
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Ile Arg

<210> 889

<211> 1452

<212> DNA

<213> *Neisseria meningitidis*

<400> 889

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gatggggaga tggcaggtgg gaataaacct attaaatctt taccacacag tgccgctgaa 1140
aaaagaaaaa aaaattttga gaagttaaat agtaactgga gttcagcaag ttttgattca 1200
gtgcacaaaa cactaactcc caatgcacct ggtattttta gtctgataa agttaaaact 1260
cgatacacta gtttagatgg aaaaattaca attataaaag ataacgaaaa caactatttt 1320
agaatccatg ataattcacg aaaacagtat cttgattcaa atggtaatgc tgtgaaaacc 1380
ggtaatttac aaggtaagca agcaaaagat tatttacaac aacaaactca tatcaggaac 1440
ttagacaaat ga 1452

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<210> 890

<211> 483

<212> PRT

<213> *Neisseria meningitidis*

<400> 890

Met	Asn	Leu	Pro	Ile	Gln	Lys	Phe	Met	Met	Leu	Phe	Ala	Ala	Ala	Ile
1				5					10						15
Ser	Leu	Leu	Gln	Ile	Pro	Ile	Ser	His	Ala	Asn	Gly	Leu	Asp	Ala	Arg
			20					25					30		
Leu	Arg	Asp	Asp	Met	Gln	Ala	Lys	His	Tyr	Glu	Pro	Gly	Gly	Lys	Tyr
		35					40					45			
His	Leu	Phe	Gly	Asn	Ala	Arg	Gly	Ser	Val	Lys	Lys	Arg	Val	Tyr	Ala
	50					55					60				
Val	Gln	Thr	Phe	Asp	Ala	Thr	Ala	Val	Ser	Pro	Val	Leu	Pro	Ile	Thr
	65				70					75					80
His	Glu	Arg	Thr	Gly	Phe	Glu	Gly	Val	Ile	Gly	Tyr	Glu	Thr	His	Phe
				85					90					95	
Ser	Gly	His	Gly	His	Glu	Val	His	Ser	Pro	Phe	Asp	His	His	Asp	Ser
			100					105					110		
Lys	Ser	Thr	Ser	Asp	Phe	Ser	Gly	Gly	Val	Asp	Gly	Gly	Phe	Thr	Val
		115					120					125			
Tyr	Gln	Leu	His	Arg	Thr	Gly	Ser	Glu	Ile	His	Pro	Glu	Asp	Gly	Tyr
	130					135					140				
Asp	Gly	Pro	Gln	Gly	Ser	Asp	Tyr	Pro	Pro	Pro	Gly	Gly	Ala	Arg	Asp
145					150					155					160
Ile	Tyr	Ser	Tyr	Tyr	Val	Lys	Gly	Thr	Ser	Thr	Lys	Thr	Lys	Thr	Asn
				165					170					175	
Ile	Val	Pro	Gln	Ala	Pro	Phe	Ser	Asp	Arg	Trp	Leu	Lys	Glu	Asn	Ala
			180					185					190		
Gly	Ala	Ala	Ser	Gly	Phe	Phe	Ser	Arg	Ala	Asp	Glu	Ala	Gly	Lys	Leu
		195					200					205			
Ile	Trp	Glu	Ser	Asp	Pro	Asn	Lys	Asn	Trp	Trp	Ala	Asn	Arg	Met	Asp
	210					215					220				
Asp	Val	Arg	Gly	Ile	Val	Gln	Gly	Ala	Val	Asn	Pro	Phe	Leu	Met	Gly
225					230					235					240
Phe	Gln	Gly	Val	Gly	Ile	Gly	Ala	Ile	Thr	Asp	Ser	Ala	Val	Ser	Pro
				245					250					255	
Val	Thr	Asp	Thr	Ala	Ala	Gln	Gln	Thr	Leu	Gln	Gly	Ile	Asn	Asp	Leu
			260					265					270		
Gly	Lys	Leu	Ser	Pro	Glu	Ala	Gln	Leu	Ala	Ala	Ala	Ser	Leu	Leu	Gln

275	280	285
Asp Ser Ala Phe Ala Val Lys Asp Gly Ile Asn Ser Ala Lys Gln Trp		
290	295	300
Ala Asp Ala His Pro Asn Ile Thr Ala Thr Ala Gln Thr Ala Leu Ser		
305	310	315
Ala Ala Glu Ala Ala Gly Thr Val Trp Arg Gly Lys Lys Val Glu Leu		
	325	330
Asn Pro Thr Lys Trp Asp Trp Val Lys Asn Thr Gly Tyr Lys Lys Pro		
	340	345
Ala Ala Arg His Met Gln Thr Leu Asp Gly Glu Met Ala Gly Gly Asn		
	355	360
Lys Pro Ile Lys Ser Leu Pro Asn Ser Ala Ala Glu Lys Arg Lys Gln		
	370	375
Asn Phe Glu Lys Phe Asn Ser Asn Trp Ser Ser Ala Ser Phe Asp Ser		
385	390	395
Val His Lys Thr Leu Thr Pro Asn Ala Pro Gly Ile Leu Ser Pro Asp		
	405	410
Lys Val Lys Thr Arg Tyr Thr Ser Leu Asp Gly Lys Ile Thr Ile Ile		
	420	425
Lys Asp Asn Glu Asn Asn Tyr Phe Arg Ile His Asp Asn Ser Arg Lys		
	435	440
Gln Tyr Leu Asp Ser Asn Gly Asn Ala Val Lys Thr Gly Asn Leu Gln		
	450	455
Gly Lys Gln Ala Lys Asp Tyr Leu Gln Gln Gln Thr His Ile Arg Asn		
465	470	475
Leu Asp Lys		

<210> 891
 <211> 1155
 <212> DNA
 <213> Neisseria meningitidis

<400> 891
 atgaatttgc ctattcaaaa attcatgatg ctgtttgcag cagcaatatc gttgctgcaa 60
 atccccatta gtcattgcga cgggtttgat gcccgtttgc gcgatgatat gcaggcaaaa 120
 cactacgaac cgggttgtaa ataccatctg tttggtaatg ctgcgcgcag tggtaaaaat 180
 cgggttttac cgtccaaac atttgatgca actgcggtcg gccccatact gcctattaca 240
 cacgaacgga caggatttga aggcattatc ggttatgaaa cccatttttc aggacatgga 300
 catgaagtac acagtccgtt cgataatcat gattcaaaaa gcacttctga tttcagcggc 360
 ggcgtagacg gtggttttac cgtttaccaa cttcatcgga cagggtcgga aatccatccg 420
 gaggatggat atgacgggcc gcaaggcagc gattatccgc ccccgaggag agcaagggat 480
 atatacagct actatgtcaa aggaacttca acaaaaacaa agagtaatat tgttccccga 540

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gccccatttt cagaccgctg gctaaaagaa aatgccggtg ccgcctcttg ttttttcagc 600
cgtgctgatg aagcaggaaa actgatatgg gaaagcgacc ccaataaaaa ttggtgggct 660

aaccgtatgg atgatattcg cggcatcgtc caaggtgctg ttaatccttt tttaatgggt 720
tttcaaggag tagggattgg ggcaattaca gacagtgcag taagcccgtt cacagataca 780
gccgcgcagc agactctaca aggtattaat catttaggaa atttaagtcc cgaagcacia 840
cttgccgctg caaccgcatt acaagacagt gcttttgctg taaaagacgg tatcaattcc 900
gccagacaat gggctgatgc ccatccgaat ataactgcaa cagcccaaac tgcccttgcc 960
gtagcagagg ccgcaactac ggtttggggc ggtaaaaaag tagaacttaa cccgaccaa 1020
tgggattggg ttaaaaatac cggctataaa acacctgctg ttgcacccat gcatactttg 1080
gatggggaaa tggccggtgg gaatagaccg cctaaatcta taacgtccaa cagcaaagca 1140
gatgcttcca cacia 1155

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<210> 892

<211> 385

<212> PRT

<213> Neisseria meningitidis

<400> 892

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Met Asn Leu Pro Ile Gln Lys Phe Met Met Leu Phe Ala Ala Ala Ile
  1             5             10             15

Ser Leu Leu Gln Ile Pro Ile Ser His Ala Asn Gly Leu Asp Ala Arg
      20             25             30

Leu Arg Asp Asp Met Gln Ala Lys His Tyr Glu Pro Gly Gly Lys Tyr
      35             40             45

His Leu Phe Gly Asn Ala Arg Gly Ser Val Lys Asn Arg Val Tyr Ala
      50             55             60

Val Gln Thr Phe Asp Ala Thr Ala Val Gly Pro Ile Leu Pro Ile Thr
      65             70             75             80

His Glu Arg Thr Gly Phe Glu Gly Ile Ile Gly Tyr Glu Thr His Phe
      85             90             95

Ser Gly His Gly His Glu Val His Ser Pro Phe Asp Asn His Asp Ser
      100            105            110

Lys Ser Thr Ser Asp Phe Ser Gly Gly Val Asp Gly Gly Phe Thr Val
      115            120            125

Tyr Gln Leu His Arg Thr Gly Ser Glu Ile His Pro Glu Asp Gly Tyr
      130            135            140

Asp Gly Pro Gln Gly Ser Asp Tyr Pro Pro Pro Gly Gly Ala Arg Asp
      145            150            155            160

Ile Tyr Ser Tyr Tyr Val Lys Gly Thr Ser Thr Lys Thr Lys Ser Asn
      165            170            175

Ile Val Pro Arg Ala Pro Phe Ser Asp Arg Trp Leu Lys Glu Asn Ala
      180            185            190

Gly Ala Ala Ser Gly Phe Phe Ser Arg Ala Asp Glu Ala Gly Lys Leu

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195					200					205					
Ile	Trp	Glu	Ser	Asp	Pro	Asn	Lys	Asn	Trp	Trp	Ala	Asn	Arg	Met	Asp
210						215					220				
Asp	Ile	Arg	Gly	Ile	Val	Gln	Gly	Ala	Val	Asn	Pro	Phe	Leu	Met	Gly
225					230					235					240
Phe	Gln	Gly	Val	Gly	Ile	Gly	Ala	Ile	Thr	Asp	Ser	Ala	Val	Ser	Pro
				245					250					255	
Val	Thr	Asp	Thr	Ala	Ala	Gln	Gln	Thr	Leu	Gln	Gly	Ile	Asn	His	Leu
			260					265					270		
Gly	Asn	Leu	Ser	Pro	Glu	Ala	Gln	Leu	Ala	Ala	Ala	Thr	Ala	Leu	Gln
	275						280					285			
Asp	Ser	Ala	Phe	Ala	Val	Lys	Asp	Gly	Ile	Asn	Ser	Ala	Arg	Gln	Trp
	290					295					300				
Ala	Asp	Ala	His	Pro	Asn	Ile	Thr	Ala	Thr	Ala	Gln	Thr	Ala	Leu	Ala
305					310				315					320	
Val	Ala	Glu	Ala	Ala	Thr	Thr	Val	Trp	Gly	Gly	Lys	Lys	Val	Glu	Leu
				325					330					335	
Asn	Pro	Thr	Lys	Trp	Asp	Trp	Val	Lys	Asn	Thr	Gly	Tyr	Lys	Thr	Pro
			340					345					350		
Ala	Val	Arg	Thr	Met	His	Thr	Leu	Asp	Gly	Glu	Met	Ala	Gly	Gly	Asn
			355				360					365			
Arg	Pro	Pro	Lys	Ser	Ile	Thr	Ser	Asn	Ser	Lys	Ala	Asp	Ala	Ser	Thr
	370					375					380				
Gln															
385															

<210> 893
 <211> 768
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 893
 atgttccacc ataaaggtat tgcccgaaac cggcggatgg aggttttgtt tttctgccgc 60
 cgccctgatc gcttcgtgat tcgccaaacg cgccgtgtgc agcctcattt gcgcataatc 120
 ctgctccaag gcgatttcct gttttttcgc cttgtccaaa gctgtgaagt tgagcctgta 180
 ctgggttttg tgcatacaca cggaaaaagc ggaaacgcac accgcaagca gcagaaagaa 240
 attcgatttg ttcattgccg ttcagacgtt tttctctgtt attattccgg tatcggaccg 300
 gcagtcgcgt ccgccacacg caaaactgcg ctctctgcgc tcgggttggc ggcaatttcc 360
 gcttcacccg gctttaatgc cctgcccacg attttcaggg gcggatcggg caaatccgct 420
 tctctgaccg ccgccagct cggcaggggc tcgtgttgcg aatatttttt gacaaaactgc 480
 ttcacaatgc ggtcttccaa cgaatggaaa gcaatgaccg ccaaacgccc gccctctttc 540
 agacggcaca tgacctgcgg caataccgcc cctacttctt caagctcgcg gttaataaag 600
 atgcggattg cctggaaggt gcgcgtcgca ggatcctgcc cccgctcgcg agtacggacg 660

ttttgtgccg cgatctgcgc cagcttgccg gttgtatcga ttggactttc cgcccgttgc 720
gcgacaatgg cgcgcacaat ctggcggcta aaccgctctt caccataa 768

<210> 894
<211> 255
<212> PRT
<213> Neisseria gonorrhoeae

<400> 894

Met	Phe	His	His	Lys	Gly	Ile	Ala	Arg	Asn	Arg	Arg	Met	Glu	Val	Leu
1				5					10					15	
Phe	Phe	Cys	Arg	Arg	Pro	Asp	Arg	Phe	Val	Ile	Arg	Gln	Thr	Arg	Leu
			20					25					30		
Leu	Gln	Pro	His	Leu	Arg	Ile	Ile	Leu	Leu	Gln	Gly	Asp	Phe	Leu	Phe
		35					40					45			
Phe	Arg	Leu	Val	Gln	Ser	Cys	Glu	Val	Glu	Pro	Val	Leu	Val	Leu	Leu
	50					55					60				
His	His	Asn	Gly	Lys	Ser	Gly	Asn	Ala	His	Arg	Lys	Gln	Gln	Lys	Glu
65					70					75					80
Ile	Arg	Phe	Val	His	Cys	Arg	Ser	Asp	Val	Phe	Leu	Cys	Tyr	Tyr	Ser
				85					90					95	
Gly	Ile	Gly	Pro	Ala	Val	Arg	Ser	Ala	Thr	Arg	Lys	Thr	Ala	Leu	Leu
			100					105					110		
Ala	Leu	Gly	Leu	Ala	Ala	Ile	Ser	Ala	Ser	Pro	Gly	Phe	Asn	Ala	Leu
		115					120					125			
Pro	Thr	Ile	Phe	Arg	Gly	Gly	Ser	Gly	Lys	Ser	Ala	Ser	Leu	Thr	Ala
	130					135					140				
Ala	Gln	Leu	Gly	Arg	Gly	Ser	Cys	Cys	Glu	Tyr	Phe	Leu	Thr	Asn	Cys
145					150					155					160
Phe	Thr	Met	Arg	Ser	Ser	Asn	Glu	Trp	Lys	Ala	Met	Thr	Ala	Lys	Arg
				165					170					175	
Pro	Pro	Ser	Phe	Arg	Arg	His	Met	Thr	Cys	Gly	Asn	Thr	Ala	Pro	Thr
			180					185					190		
Ser	Ser	Ser	Ser	Arg	Leu	Ile	Lys	Met	Arg	Ile	Ala	Trp	Lys	Val	Arg
		195					200					205			
Val	Ala	Gly	Ser	Cys	Pro	Arg	Ser	Arg	Val	Arg	Thr	Phe	Cys	Ala	Thr
	210					215					220				
Ile	Cys	Ala	Ser	Leu	Arg	Val	Val	Ser	Ile	Gly	Leu	Ser	Ala	Arg	Cys
225					230					235					240
Ala	Thr	Met	Ala	Arg	Thr	Ile	Trp	Arg	Leu	Asn	Arg	Ser	Ser	Pro	

245

250

255

<210> 895
 <211> 768
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 895
 atgctccacc ataaaaggtmy kgcccgaaac cggekgatgg aggttttgtt tttctgccgc 60
 cgccctgata gcttcgtggt tcgccaaacg cgccctgttg agcctcattt gcgcataatc 120
 ctgctccaag gcgatttcct gttttttcgc cttatccaaa gctgtgaaat tgagcctgta 180
 ctggttttgc tgcatacaaa cggaaaaagc ggaaacgcac accgcaagca gcagaaggaa 240
 attcaatttg ttcattgcca ttcagacggt tttctctgtg attgttccgg tatcggaccg 300
 gcagtcgct cgcgcacacg caaaaccgca cttctcgccc tcggattggc ggcaatttcc 360
 gcctcaccg gctttaatgc cctgcccacg attttcaggg gcagctcggg caaatccgct 420
 tccctgaccg ccgcccagcg cggcaggggc gcgtgttgcg aatatttttt gacaaactgc 480
 ttcacaatgc gatcttccaa cgaatggaaa gcaatgaccg ccaaacgtcc gccctctttc 540
 agacgacaca tgacctgcgg caatactgcc cctacttctt caagctcgcg gttaataaag 600
 atgcggaccg cctggaaggt gcgcgtcgca ggatcctgcc cccgctcgcg agtacggacg 660
 ttttgtgcca cgatctgcgc cagcttgcgg gttgtatoga ttggactttc cgcccgttgc 720
 gcaacaatgg cgcgcgcaat ccgycggtta aaccgctctt caccataa 768

<210> 896
 <211> 255
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 896
 Met Leu His His Lys Gly Xaa Ala Arg Asn Arg Xaa Met Glu Val Leu
 1 5 10 15
 Phe Phe Cys Arg Arg Pro Asp Arg Phe Val Val Arg Gln Thr Arg Leu
 20 25 30
 Leu Gln Pro His Leu Arg Ile Ile Leu Leu Gln Gly Asp Phe Leu Phe
 35 40 45
 Phe Arg Leu Ile Gln Ser Cys Glu Ile Glu Pro Val Leu Val Leu Leu
 50 55 60
 His His Asn Gly Lys Ser Gly Asn Ala His Arg Lys Gln Gln Lys Glu
 65 70 75 80
 Ile Gln Phe Val His Cys His Ser Asp Val Phe Leu Cys Asp Cys Ser
 85 90 95
 Gly Ile Gly Pro Ala Val Arg Ser Ala Thr Arg Lys Thr Ala Leu Leu
 100 105 110
 Ala Leu Gly Leu Ala Ala Ile Ser Ala Ser Pro Gly Phe Asn Ala Leu
 115 120 125
 Pro Thr Ile Phe Arg Gly Ser Ser Gly Lys Ser Ala Ser Leu Thr Ala
 130 135 140

Ala Gln Arg Gly Arg Gly Ala Cys Cys Glu Tyr Phe Leu Thr Asn Cys
145 150 155 160

Phe Thr Met Arg Ser Ser Asn Glu Trp Lys Ala Met Thr Ala Lys Arg
165 170 175

Pro Pro Ser Phe Arg Arg His Met Thr Cys Gly Asn Thr Ala Pro Thr
180 185 190

Ser Ser Ser Ser Arg Leu Ile Lys Met Arg Thr Ala Trp Lys Val Arg
195 200 205

Val Ala Gly Ser Cys Pro Arg Ser Arg Val Arg Thr Phe Cys Ala Thr
210 215 220

Ile Cys Ala Ser Leu Arg Val Val Ser Ile Gly Leu Ser Ala Arg Cys
225 230 235 240

Ala Thr Met Ala Arg Ala Ile Arg Arg Leu Asn Arg Ser Ser Pro
245 250 255

<210> 897
<211> 768
<212> DNA
<213> Neisseria meningitidis

<400> 897
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cgccctgatc gcttcgtggt tcgccaaacg cgccgtgtgc agcctcattt gcgcataatc 120
ctgctccaag gcgatttcct gttttttcgc cttatccaaa gctgtgaagt tgagcctgta 180
ctggttttgc tgcatacaaa cggaaaaagc ggaaacgcac accgcaagca gcagaaggaa 240
attcaatttg ttcattgccca ttcagacggt tttctctgtg attgttcggt tatcggaccg 300
gcagtccgct ccgccacacg caaaaccgca cttctcgcgc tcggattggc ggcaatttcc 360
gcctcaccgc gctttaatgc cctgcccgcg attttcaggg gcggctcggg caaatccgct 420
tccttgaccg ccgcccagcg cggcaggggc gcgtgttgcg aatatttttt gacaaactgc 480
ttcacaatgc ggtcttccaa cgaatggaaa gcaatgaccg ccaaacgtcc gccctctttc 540
agacgacaca tgacctgcgg caatactgcc cctacttctt caagctcgcg gttaataaag 600
atgcggattg cctggaaggt gcgcgtcgca ggatcctgcc cccgctcgcg agtacggacg 660
ttttgtgccca cgatctgcgc cagcttgccg gttgtatcga ttggactttc cgcccgttgc 720
gcaacaatgg cgcgcgcaat ctggcgggcta aaccgctctt caccataa 768

<210> 898
<211> 255
<212> PRT
<213> Neisseria meningitidis

<400> 898
Met Leu His His Lys Gly Ile Ala Arg Asn Arg Arg Met Glu Val Leu
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Phe Phe Cys Arg Arg Pro Asp Arg Phe Val Val Arg Gln Thr Arg Leu
20 25 30

Leu Gln Pro His Leu Arg Ile Ile Leu Leu Gln Gly Asp Phe Leu Phe

35					40					45					
Phe	Arg	Leu	Ile	Gln	Ser	Cys	Glu	Val	Glu	Pro	Val	Leu	Val	Leu	Leu
50					55					60					
His	His	Asn	Gly	Lys	Ser	Gly	Asn	Ala	His	Arg	Lys	Gln	Gln	Lys	Glu
65					70					75					80
Ile	Gln	Phe	Val	His	Cys	His	Ser	Asp	Val	Phe	Leu	Cys	Asp	Cys	Ser
				85					90					95	
Gly	Ile	Gly	Pro	Ala	Val	Arg	Ser	Ala	Thr	Arg	Lys	Thr	Ala	Leu	Leu
			100					105					110		
Ala	Leu	Gly	Leu	Ala	Ala	Ile	Ser	Ala	Ser	Pro	Gly	Phe	Asn	Ala	Leu
		115					120					125			
Pro	Ala	Ile	Phe	Arg	Gly	Gly	Ser	Gly	Lys	Ser	Ala	Ser	Leu	Thr	Ala
	130					135					140				
Ala	Gln	Arg	Gly	Arg	Gly	Ala	Cys	Cys	Glu	Tyr	Phe	Leu	Thr	Asn	Cys
145					150					155					160
Phe	Thr	Met	Arg	Ser	Ser	Asn	Glu	Trp	Lys	Ala	Met	Thr	Ala	Lys	Arg
			165						170					175	
Pro	Pro	Ser	Phe	Arg	Arg	His	Met	Thr	Cys	Gly	Asn	Thr	Ala	Pro	Thr
			180					185					190		
Ser	Ser	Ser	Ser	Arg	Leu	Ile	Lys	Met	Arg	Ile	Ala	Trp	Lys	Val	Arg
		195					200					205			
Val	Ala	Gly	Ser	Cys	Pro	Arg	Ser	Arg	Val	Arg	Thr	Phe	Cys	Ala	Thr
	210					215					220				
Ile	Cys	Ala	Ser	Leu	Arg	Val	Val	Ser	Ile	Gly	Leu	Ser	Ala	Arg	Cys
225					230					235					240
Ala	Thr	Met	Ala	Arg	Ala	Ile	Trp	Arg	Leu	Asn	Arg	Ser	Ser	Pro	
			245						250					255	

<210> 899

<211> 663

<212> DNA

<213> Neisseria gonorrhoeae

<400> 899

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gttgacgat ttctgcataa tgccgcgcac atccaaagag gggtaaacaat gggatatcatc 120
gcgcacggga gacggtccga tttataagg ctgcgtattc agccgttcgt tcaaatacggg 180
tttgcccgca tccaatgcct tcgcaatcac gaacggtttg attgccgaac caggttcgat 240
catatcggtt acggcacggt tgcgccgctg ttcgctgtct gcccgcccg gtctgttggg 300
atcgtaggcg ggcgtattgg ccaaggcgag gatttcccc gtgcgggcat ccaaaaccac 360
caccgttccg gcttttgcct gatggtattc gaccgccttg ttcaactctt cataggccaa 420
ggctctgaatc ctctgatcga gggaaaggat gatgtctttg ccgttttgcg gtgctttatt 480
gcgcggggag tccaagctgt ccacaatatt gccctgccgg tcccgcaaaa caacttccgc 540

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gccgtcttcg ccatacaggc tgtcttcaag cgaaagttcc aaaccttcct gacctttgcc 600
gtcaatatcg gtaaattccga tgacgtgtgc aaacaggttg cccatcggtt aatggcggtt 660
taa                                                    663

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<210> 900
<211> 220
<212> PRT
<213> Neisseria gonorrhoeae

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<400> 900
Met Ile Glu Val Ile His Phe Phe Gly Ala Glu Thr Arg Arg Gln Phe
 1           5           10           15

Ala Cys Ala Asp Val Gly Arg Phe Leu His Asn Ala Ala His Ile Gln
 20           25           30

Arg Gly Val Asn Met Gly Ile Ile Ala His Gly Arg Arg Ser Asp Phe
 35           40           45

Ile Arg Leu Arg Ile Gln Pro Phe Val Gln Ile Gly Phe Ala Arg Ile
 50           55           60

Gln Cys Leu Arg Asn His Glu Arg Phe Asp Cys Arg Thr Arg Phe Asp
 65           70           75           80

His Ile Gly Tyr Gly Thr Val Ala Pro Leu Phe Ala Val Cys Pro Ala
 85           90           95

Gly Ser Val Gly Ile Val Gly Gly Arg Ile Gly Gln Gly Glu Asp Phe
100           105           110

Pro Arg Ala Gly Ile Gln Asn His His Arg Ser Gly Phe Cys Leu Met
115           120           125

Val Phe Asp Arg Leu Val Gln Leu Phe Ile Gly Gln Gly Leu Asn Pro
130           135           140

Leu Ile Glu Gly Lys Asp Asp Val Phe Ala Val Leu Arg Cys Phe Ile
145           150           155           160

Ala Arg Gly Val Gln Ala Val His Asn Ile Ala Leu Pro Val Pro Gln
165           170           175

Asn Asn Phe Arg Ala Val Phe Ala Ile Gln Ala Val Phe Lys Arg Lys
180           185           190

Phe Gln Thr Phe Leu Thr Phe Ala Val Asn Ile Gly Lys Ser Asp Asp
195           200           205

Val Cys Lys Gln Val Ala His Arg Val Met Ala Phe
210           215           220

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<210> 901
<211> 660
<212> DNA

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<213> Neisseria meningitidis

<400> 901

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gttggacgat ttctgcatga tgccgcgcac atccaaagag gggtaaacad gggatatcgcg 120
cacgggagac ggtccgattt tataaggctg cgtattcagc cgttcgttca aatcgggtttt 180
gcccgcatcc aatgccttcg caatcacaaa cggtttgatt gccgaaccgg gttcgatcat 240
atcggttacg gcacggttgc gccgctgttc gctgtctgcc cggccggggc tgttgggatc 300
gtaggcgggc gtattggcca aggcgaggat ttccccctg cgggcatcca araccaccac 360
cgttccggct tttgcctgat ggtattcgac cgccttgttc aactcttcat aggccaaggt 420
ctgaatcctc tgatcgaggg aaaggatgat gtctttgccg tttttcgggg ctttaktgcg 480
cggggagttc aagctgtcca caatattgcc ctgccggtcc cgcaaaacga cttccgcgcc 540
gtcttcgcca tgcaagctgt cttcaagcga aagttccaaa ccttcctgac ctttgccgtc 600
aatatcggtg aatccgatga cgtgtgcaaa caggttgccc atcgggtaat ggcgttttaa 660
```

<210> 902

<211> 219

<212> PRT

<213> Neisseria meningitidis

<400> 902

```
Met Ile Glu Val Ile His Phe Phe Gly Thr Glu Thr Arg Arg Gln Phe
  1             5             10             15

Ala Cys Ala Asp Val Gly Arg Phe Leu His Asp Ala Ala His Ile Gln
      20             25             30

Arg Gly Val Asn Met Gly Ile Ala His Gly Arg Arg Ser Asp Phe Ile
      35             40             45

Arg Leu Arg Ile Gln Pro Phe Val Gln Ile Gly Phe Ala Arg Ile Gln
      50             55             60

Cys Leu Arg Asn His Lys Arg Phe Asp Cys Arg Thr Gly Phe Asp His
      65             70             75             80

Ile Gly Tyr Gly Thr Val Ala Pro Leu Phe Ala Val Cys Pro Ala Gly
      85             90             95

Pro Val Gly Ile Val Gly Gly Arg Ile Gly Gln Gly Glu Asp Phe Pro
      100            105            110

Arg Ala Gly Ile Gln Xaa His His Arg Ser Gly Phe Cys Leu Met Val
      115            120            125

Phe Asp Arg Leu Val Gln Leu Phe Ile Gly Gln Gly Leu Asn Pro Leu
      130            135            140

Ile Glu Gly Lys Asp Asp Val Phe Ala Val Phe Arg Gly Phe Xaa Ala
      145            150            155            160

Arg Gly Val Gln Ala Val His Asn Ile Ala Leu Pro Val Pro Gln Asn
      165            170            175

Asp Phe Arg Ala Val Phe Ala Met Gln Ala Val Phe Lys Arg Lys Phe
      180            185            190
```

Gln Thr Phe Leu Thr Phe Ala Val Asn Ile Gly Lys Ser Asp Asp Val
 195 200 205

Cys Lys Gln Val Ala His Arg Val Met Ala Phe
 210 215

<210> 903
 <211> 660
 <212> DNA
 <213> Neisseria meningitidis

<400> 903
 atgatagaag tcatacat tttcgtgcacc gaaacgcgca gacagtttgc ttgtgccgac 60
 gttggacgat ttctgcatga tgccgcgcac atccaaagag gggtaaacad gggatatcgcg 120
 cacgggagac ggtccgattt tataaggctg cgtattcagc cgttcgttca aatcggtttt 180
 gcccgcatcc aatgccttcg caatcacaaa cggtttgatt gccgaaccgg gttcgatcat 240
 atcggttacg gcacggttgc gccgctgttc gctgtctgcc cggccggggc tgttgggac 300
 gtaggcgggc gtattggcca aggcgaggat ttcccccggtg cgggcaccca aaaccaccac 360
 cgttccgggt tttgcctgat ggtattcgac cgccttggtc aactcttcat aggccaaggt 420
 ctgaatcctc tgatcgaggg aaaggatgat gtctttgccg tttttcgggg ctttattgcg 480
 cggggagtc aagctgtcca caatattgcc ctgccgggtc cgcaaaacga cttccgcgcc 540
 gtcttcgcca tgcaggctgt cttcaagcga aagttccaaa ccttcctgac ctttgccgctc 600
 aatatcggt aatccgatga cgtgtgcaaa caggttgccc atcgggtaat ggcgttttaa 660

<210> 904
 <211> 219
 <212> PRT
 <213> Neisseria meningitidis

<400> 904
 Met Ile Glu Val Ile His Phe Phe Gly Thr Glu Thr Arg Arg Gln Phe
 1 5 10 15
 Ala Cys Ala Asp Val Gly Arg Phe Leu His Asp Ala Ala His Ile Gln
 20 25 30
 Arg Gly Val Asn Met Gly Ile Ala His Gly Arg Arg Ser Asp Phe Ile
 35 40 45
 Arg Leu Arg Ile Gln Pro Phe Val Gln Ile Gly Phe Ala Arg Ile Gln
 50 55 60
 Cys Leu Arg Asn His Lys Arg Phe Asp Cys Arg Thr Gly Phe Asp His
 65 70 75 80
 Ile Gly Tyr Gly Thr Val Ala Pro Leu Phe Ala Val Cys Pro Ala Gly
 85 90 95
 Pro Val Gly Ile Val Gly Gly Arg Ile Gly Gln Gly Glu Asp Phe Pro
 100 105 110
 Arg Ala Gly Ile Gln Asn His His Arg Ser Gly Phe Cys Leu Met Val
 115 120 125

Phe Asp Arg Leu Val Gln Leu Phe Ile Gly Gln Gly Leu Asn Pro Leu
 130 135 140
 Ile Glu Gly Lys Asp Asp Val Phe Ala Val Phe Arg Gly Phe Ile Ala
 145 150 155 160
 Arg Gly Val Gln Ala Val His Asn Ile Ala Leu Pro Val Pro Gln Asn
 165 170 175
 Asp Phe Arg Ala Val Phe Ala Met Gln Ala Val Phe Lys Arg Lys Phe
 180 185 190
 Gln Thr Phe Leu Thr Phe Ala Val Asn Ile Gly Lys Ser Asp Asp Val
 195 200 205
 Cys Lys Gln Val Ala His Arg Val Met Ala Phe
 210 215

<210> 905
 <211> 660
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 905
 atgatagaag tcatacatTTT cttcggcacc gaaacgcgca gacagtttgc ttgtgccgac 60
 gttggacgat ttctgcatga tgccgcgcac atccaaagag gggtaaacad gggatatcgcg 120
 cacgggagac ggtccgattt tataaggctg cgtattcagc cgttcgttca aatcggtttt 180
 gcccgcatcc aatgccttcg caatcacaaa cggtttgatt gccgaaccgg gttcgatcat 240
 atcgggttacg gcaacggttgcc gccgctgttc gctgtctgcc cggccggggc tgttgggac 300
 gtaggcggggc gtattggcca aggcgaggat ttcccccggtg cgggcatcca araccaccac 360
 cgttccgggct tttgcctgat ggtattcgac cgccttggtc aactcttcat aggccaaggt 420
 ctgaatcctc tgatcgaggg aaaggatgat gtctttgccg tttttcgggg ctttaktgcg 480
 cggggagtc aagctgtcca caatattgcc ctgcgggtcc cgcaaaacga cttccgcgcc 540
 gtcttcgcca tgcaagctgt cttcaagcga aagttccaaa ccttcttgac ctttgccgtc 600
 aatatcggt aatccgatga cgtgtgcaaa cagggtgccc atcgggtaat ggcgttttaa 660

<210> 906
 <211> 267
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 906
 Met Pro Thr Arg Pro Thr Arg Ala Ala Asn Pro Pro Thr Pro Thr Thr
 1 5 10 15
 Trp Leu Gln Thr Ala Tyr Cys Pro Arg Pro Pro Tyr Arg Pro Pro Ser
 20 25 30
 Val Gln Thr His Thr Pro His Glu Pro Ala Ser Ser Thr Cys Ala Ala
 35 40 45
 Lys Ser Ala Asn Arg Arg Glu Asn Ser His Asn Ala Gln Pro Thr Tyr
 50 55 60
 Leu Leu His Pro Ser Asn Lys Met Pro Ser Glu Thr Glu Gln Thr Leu

65		70		75		80
Phe Arg Arg His Gln Ile Pro Pro Ser Cys Arg Gln Ser Val Val Val						
	85			90		95
Met Thr Val Arg Thr Val Asp Met Thr Val Cys Asp Phe Leu Ile Gly						
	100			105		110
Cys Ile Ala His Ala Phe Asn Arg Ser Phe Lys Ala Asp Phe His Ala						
	115			120		125
Cys Gln Arg Met Val Ala Val His His Arg Leu Ala Val Gly Asn Ile						
	130			135		140
Gly Tyr Thr Ile Asp Asp Asn Ile Ala Gly Phe Arg Ile Val Arg Phe						
	145			150		155
Lys His His Thr Asp Leu Asp Phe Asn Arg Glu Arg Ala Arg Ile Phe						
	165			170		175
Asn Thr Asp Gln Leu Arg Ile Met Leu Thr Glu Arg Ile Val Gly Arg						
	180			185		190
Lys Arg His Phe Asp Arg Ile Ala Gly Ile Leu Thr Val Gln Arg Leu						
	195			200		205
Phe His Gln Arg Glu Asn Ala Val Val Thr Ala Val Gln Ile Arg Asn						
	210			215		220
Arg Phe Phe Gly Phe Ile Gln Lys Leu Ile Val Gly Ile Ile His Leu						
	225			230		235
Ile Met Gln Arg Asn His Gly Ile Phe Cys Asn Ser His Ile Cys Pro						
	245			250		255
Phe Arg Asn Ser Arg Leu Ile Thr Gly Ala Phe						
	260			265		

<210> 907
 <211> 534
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 907
 cggcaatcag tgggtggtgat gaccgtgctg gccgtggaca tgaccgtgtg cgatttcctc 60
 atcggtatgca tcgcgcacgc tttcaactgt agccttaaag cggattttca tgcctgccaa 120
 aggatggttg ccgtccacca ccgccttgcc gtcggcaaca tcggttacac gatagacgac 180
 aacatcgccg gtttcaggat cgtcggcttc aaacatcatg ccgacttcga cttcaacagg 240
 gaacacgccc gcattcttga tacggaccaa ctccggatcc tgctcgccga acgcatcgtc 300
 gggcgacagc gccacatcga ccgtatcgcc ggcattccta ccgtgcaacg cctcttccac 360
 caaagggaat atgccgtcgt aaccgcccgtg cagatacgca atcggttctt cggttttgtc 420
 caaaagctga ttgttggcat catacatctc ataatgcagc gaaaccacgg aatttttcac 480
 gatagccata tttgtccttt caggaacagc agattaatta caggcgcatt ctaa 534

<210> 908

<211> 177
 <212> PRT
 <213> Neisseria meningitidis

<400> 908

```

Arg Gln Ser Val Val Val Met Thr Val Arg Ala Val Asp Met Thr Val
 1              5              10              15

Cys Asp Phe Leu Ile Gly Cys Ile Ala His Ala Phe Asn Cys Ser Leu
      20              25              30

Lys Ala Asp Phe His Ala Cys Gln Arg Met Val Ala Val His His Arg
      35              40              45

Leu Ala Val Gly Asn Ile Gly Tyr Thr Ile Asp Asp Asn Ile Ala Gly
      50              55              60

Phe Arg Ile Val Gly Phe Lys His His Ala Asp Phe Asp Phe Asn Arg
      65              70              75              80

Glu His Ala Arg Ile Phe Asp Thr Asp Gln Leu Arg Ile Leu Leu Ala
      85              90              95

Glu Arg Ile Val Gly Arg Gln Arg His Ile Asp Arg Ile Ala Gly Ile
      100             105             110

Leu Thr Val Gln Arg Leu Phe His Gln Arg Glu Asn Ala Val Val Thr
      115             120             125

Ala Val Gln Ile Arg Asn Arg Phe Phe Gly Phe Val Gln Lys Leu Ile
      130             135             140

Val Gly Ile Ile His Leu Ile Met Gln Arg Asn His Gly Ile Phe His
      145             150             155             160

Asp Ser His Ile Cys Pro Phe Arg Asn Ser Arg Leu Ile Thr Gly Ala
      165             170             175

Phe
```

<210> 909
 <211> 804
 <212> DNA
 <213> Neisseria meningitidis

<400> 909

```

atgccaacac gtccaactcg cgccgcaaag catccaaccc cgccaacctg gcttcagacg 60
gcatactgcc ctcggtccgc atatcgtcgg ccggtccgtgc aaacgcatac accgcatgaa 120
ccggcttcct caacctgcmc ggcaaaatca gcgaaccgac gggaaaattt tcataatgcc 180
caaccgacat accttctcca tccatcaaac aaaatgccgt ctgaaatgga acaaaccctt 240
ttcagacggc atcagatacc tccaagctgc cggcaatcag tgggtggtgat gaccgtgcgg 300
accgtggaca tgaccgtgtg cgatttcctc atcggatgca tcgcgcacac tttcaaccgt 360
agccttaaag cggattttca tgctgccaag aggatggttg ccgtccacca ccgccttacc 420
gtcggcaaca tcggttacac gatagacgac aacatcgccg gtttcaggat cgtcggcttc 480
aaacatcatg ccgacttcga cttcaacagg gaacacgccc gcattctcaa tacggaccaa 540
```

```

ctccggatcc tgctcgccga acgcatcgtc gggcgaaagc gccacatcga ccgtatcgcc 600
ggcatcctta ccgtgcaacg cctcttccac caaagggaaa atgccgtcgt aaccgccgtg 660
cagatacgca atcggttctt cggttttgtc caaaagctga ttgttgcat catacatctc 720
ataatgcagc gaaaccacgg aattcttcac gatagccata tttgtccttt caggaacagc 780
agattaatta caggcgcatc ctaa 804

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<210> 910
<211> 267
<212> PRT
<213> Neisseria gonorrhoeae

```

```

<400> 910
Met Pro Thr Arg Pro Thr Arg Ala Ala Lys His Pro Thr Pro Pro Thr
 1          5          10          15

Trp Leu Gln Thr Ala Tyr Cys Pro Arg Pro Pro Tyr Arg Pro Pro Ser
          20          25          30

Val Gln Thr His Thr Pro His Glu Pro Ala Ser Ser Thr Cys Ala Ala
          35          40          45

Lys Ser Ala Asn Arg Arg Glu Asn Phe His Asn Ala Gln Pro Thr Tyr
          50          55          60

Leu Leu His Pro Ser Asn Lys Met Pro Ser Glu Met Glu Gln Thr Leu
          65          70          75          80

Phe Arg Arg His Gln Ile Pro Pro Ser Cys Arg Gln Ser Val Val Val
          85          90          95

Met Thr Val Arg Thr Val Asp Met Thr Val Cys Asp Phe Leu Ile Gly
          100          105          110

Cys Ile Ala His Thr Phe Asn Arg Ser Leu Lys Ala Asp Phe His Ala
          115          120          125

Cys Gln Arg Met Val Ala Val His His Arg Leu Thr Val Gly Asn Ile
          130          135          140

Gly Tyr Thr Ile Asp Asp Asn Ile Ala Gly Phe Arg Ile Val Gly Phe
          145          150          155          160

Lys His His Ala Asp Phe Asp Phe Asn Arg Glu His Ala Arg Ile Phe
          165          170          175

Asn Thr Asp Gln Leu Arg Ile Leu Leu Ala Glu Arg Ile Val Gly Arg
          180          185          190

Lys Arg His Ile Asp Arg Ile Ala Gly Ile Leu Thr Val Gln Arg Leu
          195          200          205

Phe His Gln Arg Glu Asn Ala Val Val Thr Ala Val Gln Ile Arg Asn
          210          215          220

Arg Phe Phe Gly Phe Val Gln Lys Leu Ile Val Gly Ile Ile His Leu
          225          230          235          240

```

Ile Met Gln Arg Asn His Gly Ile Leu His Asp Ser His Ile Cys Pro
 245 250 255

Phe Arg Asn Ser Arg Leu Ile Thr Gly Ala Phe
 260 265

<210> 911
 <211> 660
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 911
 atgatagaag tcatacat ttt cttcggcacc gaaacgcgca gacagtttgc ttgtgccgac 60
 gttggacgat ttctgcatga tgccgcgcac atccaaagag gggtaaacad gggatatcgcg 120
 cacgggagac ggtccgattt tataaggctg cgtattcagc cgttcgttca aatcggtttt 180
 gcccgcatcc aatgccttcg caatcacaaa cggtttgatt gccgaaccgg gttcgatcat 240
 atcggttacg gcacgggtgc gccgctgttc gctgtctgcc cggccggggc tgttgggac 300
 gtaggcgggc gtattggcca aggcgaggat tcccccggtg cgggcatcca araccaccac 360
 cgttccggct tttgctgat ggtattcgac cgcttgttc aactcttcat aggccaaggt 420
 ctgaatcttc tgatcgaggg aaaggatgat gtctttgccg tttttcgggg ctttactgcg 480
 cggggagtc aaagctgtcca caatattgcc ctgccggtcc cgcaaaacga cttccgcgcc 540
 gtcttcgcca tgcaagctgt cttcaagcga aagttccaaa ccttctcgac ctttgccgctc 600
 aatatcggtg aatccgatga cgtgtgcaaa cagggttgccc atcgggtaat ggcgttttaa 660

<210> 912
 <211> 267
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 912
 Met Pro Thr Arg Pro Thr Arg Ala Ala Asn Pro Pro Thr Pro Thr Thr
 1 5 10 15
 Trp Leu Gln Thr Ala Tyr Cys Pro Arg Pro Pro Tyr Arg Pro Pro Ser
 20 25 30
 Val Gln Thr His Thr Pro His Glu Pro Ala Ser Ser Thr Cys Ala Ala
 35 40 45
 Lys Ser Ala Asn Arg Arg Glu Asn Ser His Asn Ala Gln Pro Thr Tyr
 50 55 60
 Leu Leu His Pro Ser Asn Lys Met Pro Ser Glu Thr Glu Gln Thr Leu
 65 70 75 80
 Phe Arg Arg His Gln Ile Pro Pro Ser Cys Arg Gln Ser Val Val Val
 85 90 95
 Met Thr Val Arg Thr Val Asp Met Thr Val Cys Asp Phe Leu Ile Gly
 100 105 110
 Cys Ile Ala His Ala Phe Asn Arg Ser Phe Lys Ala Asp Phe His Ala
 115 120 125

Cys Gln Arg Met Val Ala Val His His Arg Leu Ala Val Gly Asn Ile
 130 135 140
 Gly Tyr Thr Ile Asp Asp Asn Ile Ala Gly Phe Arg Ile Val Arg Phe
 145 150 155 160
 Lys His His Thr Asp Leu Asp Phe Asn Arg Glu Arg Ala Arg Ile Phe
 165 170 175
 Asn Thr Asp Gln Leu Arg Ile Met Leu Thr Glu Arg Ile Val Gly Arg
 180 185 190
 Lys Arg His Phe Asp Arg Ile Ala Gly Ile Leu Thr Val Gln Arg Leu
 195 200 205
 Phe His Gln Arg Glu Asn Ala Val Val Thr Ala Val Gln Ile Arg Asn
 210 215 220
 Arg Phe Phe Gly Phe Ile Gln Lys Leu Ile Val Gly Ile Ile His Leu
 225 230 235 240
 Ile Met Gln Arg Asn His Gly Ile Phe Cys Asn Ser His Ile Cys Pro
 245 250 255
 Phe Arg Asn Ser Arg Leu Ile Thr Gly Ala Phe
 260 265

<210> 913
 <211> 804
 <212> DNA
 <213> Neisseria meningitidis

<400> 913
 atgccaacac gtccaactcg cgctgcaaac cctccaaccc cgccaacctg gcttcagacg 60
 gcatactgcc ctcgctccgcc atatcgctccg ccgtccgtgc aaacgcgtac accgcgtgaa 120
 ccggcttcct caacctgcgc ggcaaaatca gcgaaccgac gggaaaattc tcataatgcc 180
 caaccgacat accttctcca tccatcaaac aaaatgccgt ctgaaacgga acaaaccctt 240
 ttcagacggc atcagatacc tccaagctgc cggaatcag tgggtggtgat gaccgtgagg 300
 gccgtggaca tgaccgtgtg cgatttcctc atcggatgca tcgcgcacgc tttcaactgt 360
 agccttaaag cggattttca tgcctgccaa aggatggttg ccgtccacca ccgccttgcc 420
 gtcggcaaca tcggttacac gatagacgac aacatcgccg gtttcaggat cgtcggcttc 480
 aaacatcatg ccgacttcga cttcaacagg gaacacgccc gcatcttcga tacggaccaa 540
 ctccggatcc tgctcgccga acgcatcgtc gggcgacagc gccacatcga ccgtatcgcc 600
 ggcatcctta ccgtgcaacg cctcttcac caaagggaat atgccgtcgt aaccgccgtg 660
 cagatacgca atcgggttctt cggttttgtc caaaagctga ttgttgcat catacatctc 720
 ataatgcagc gaaaccacgg aatttttcac gatagccata tttgtccttt caggaacagc 780
 agattaatta caggcgcat ctaa 804

<210> 914
 <211> 267
 <212> PRT
 <213> Neisseria meningitidis

<400> 914
 Met Pro Thr Arg Pro Thr Arg Ala Ala Asn Pro Pro Thr Pro Pro Thr

1	5	10	15												
Trp	Leu	Gln	Thr	Ala	Tyr	Cys	Pro	Arg	Pro	Pro	Tyr	Arg	Pro	Pro	Ser
			20					25					30		
Val	Gln	Thr	Arg	Thr	Pro	Arg	Glu	Pro	Ala	Ser	Ser	Thr	Cys	Ala	Ala
		35					40					45			
Lys	Ser	Ala	Asn	Arg	Arg	Glu	Asn	Ser	His	Asn	Ala	Gln	Pro	Thr	Tyr
	50					55					60				
Leu	Leu	His	Pro	Ser	Asn	Lys	Met	Pro	Ser	Glu	Thr	Glu	Gln	Thr	Leu
	65				70					75					80
Phe	Arg	Arg	His	Gln	Ile	Pro	Pro	Ser	Cys	Arg	Gln	Ser	Val	Val	Val
			85						90					95	
Met	Thr	Val	Arg	Ala	Val	Asp	Met	Thr	Val	Cys	Asp	Phe	Leu	Ile	Gly
		100						105					110		
Cys	Ile	Ala	His	Ala	Phe	Asn	Cys	Ser	Leu	Lys	Ala	Asp	Phe	His	Ala
		115					120					125			
Cys	Gln	Arg	Met	Val	Ala	Val	His	His	Arg	Leu	Ala	Val	Gly	Asn	Ile
	130						135				140				
Gly	Tyr	Thr	Ile	Asp	Asp	Asn	Ile	Ala	Gly	Phe	Arg	Ile	Val	Gly	Phe
	145				150					155					160
Lys	His	His	Ala	Asp	Phe	Asp	Phe	Asn	Arg	Glu	His	Ala	Arg	Ile	Phe
			165					170						175	
Asp	Thr	Asp	Gln	Leu	Arg	Ile	Leu	Leu	Ala	Glu	Arg	Ile	Val	Gly	Arg
			180					185					190		
Gln	Arg	His	Ile	Asp	Arg	Ile	Ala	Gly	Ile	Leu	Thr	Val	Gln	Arg	Leu
		195					200					205			
Phe	His	Gln	Arg	Glu	Asn	Ala	Val	Val	Thr	Ala	Val	Gln	Ile	Arg	Asn
	210					215					220				
Arg	Phe	Phe	Gly	Phe	Val	Gln	Lys	Leu	Ile	Val	Gly	Ile	Ile	His	Leu
	225				230					235					240
Ile	Met	Gln	Arg	Asn	His	Gly	Ile	Phe	His	Asp	Ser	His	Ile	Cys	Pro
			245					250					255		
Phe	Arg	Asn	Ser	Arg	Leu	Ile	Thr	Gly	Ala	Phe					
		260						265							

<210> 915

<211> 804

<212> DNA

<213> Neisseria meningitidis

<400> 915

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atgccaacac gtccaactcg cgccgcaaag catccaaccc cgccaacctg gcttcagacg 60
gcatactgcc ctctgtccgc atatcgtcgc ccgtccgtgc aaacgcatac accgcatgaa 120
ccggcttcct caacctgctc ggcaaaatca gcgaaccgac gggaaaattt tcataatgcc 180
caaccgacat accttctcca tccatcaaac aaaatgccgt ctgaaatgga acaaaccctt 240
ttcagacggc atcagatacc tccaagctgc cggcaatcag tgggtggtgat gaccgtgcgg 300
accgtggaca tgaccgtgtg cgatttcctc atcggatgca tcgcgcacac tttcaaccgt 360
agccttaaag cggattttca tgcttgccaa aggatggttg ccgtccacca ccgccttacc 420
gtcggcaaca tcggttacac gatagacgac aacatcgccg gtttcaggat cgtcggcttc 480
aaacatcatg ccgacttcga cttcaacagg gaacacgccc gcatcttcaa tacggaccaa 540
ctccggatcc tgctcgccga acgcatcgtc gggcgaaagc gccacatcga ccgtatcgcc 600
ggcatcctta ccgtgcaacg cctcttccac caaagggaaa atgccgtcgt aaccgccgtg 660
cagatacgca atcggttctt cggttttgtc caaaagctga ttgttggcat catacatctc 720
ataatgcagc gaaaccacgg aattcttcac gatagccata tttgtccttt caggaacagc 780
agattaatta caggcgcatc ctaa                                     804

```

<210> 916

<211> 267

<212> PRT

<213> Neisseria meningitidis

<400> 916

```

Met Pro Thr Arg Pro Thr Arg Ala Ala Lys His Pro Thr Pro Pro Thr
  1                      5                      10                      15

```

```

Trp Leu Gln Thr Ala Tyr Cys Pro Arg Pro Pro Tyr Arg Pro Pro Ser
          20                      25                      30

```

```

Val Gln Thr His Thr Pro His Glu Pro Ala Ser Ser Thr Cys Ala Ala
      35                      40                      45

```

```

Lys Ser Ala Asn Arg Arg Glu Asn Phe His Asn Ala Gln Pro Thr Tyr
      50                      55                      60

```

```

Leu Leu His Pro Ser Asn Lys Met Pro Ser Glu Met Glu Gln Thr Leu
      65                      70                      75                      80

```

```

Phe Arg Arg His Gln Ile Pro Pro Ser Cys Arg Gln Ser Val Val Val
          85                      90                      95

```

```

Met Thr Val Arg Thr Val Asp Met Thr Val Cys Asp Phe Leu Ile Gly
      100                      105                      110

```

```

Cys Ile Ala His Thr Phe Asn Arg Ser Leu Lys Ala Asp Phe His Ala
      115                      120                      125

```

```

Cys Gln Arg Met Val Ala Val His His Arg Leu Thr Val Gly Asn Ile
      130                      135                      140

```

```

Gly Tyr Thr Ile Asp Asp Asn Ile Ala Gly Phe Arg Ile Val Gly Phe
      145                      150                      155                      160

```

```

Lys His His Ala Asp Phe Asp Phe Asn Arg Glu His Ala Arg Ile Phe
          165                      170                      175

```

```

Asn Thr Asp Gln Leu Arg Ile Leu Leu Ala Glu Arg Ile Val Gly Arg

```

180	185	190
Lys Arg His Ile Asp Arg Ile Ala Gly Ile Leu Thr Val Gln Arg Leu		
195	200	205
Phe His Gln Arg Glu Asn Ala Val Val Thr Ala Val Gln Ile Arg Asn		
210	215	220
Arg Phe Phe Gly Phe Val Gln Lys Leu Ile Val Gly Ile Ile His Leu		
225	230	235
Ile Met Gln Arg Asn His Gly Ile Leu His Asp Ser His Ile Cys Pro		
245	250	255
Phe Arg Asn Ser Arg Leu Ile Thr Gly Ala Phe		
260	265	

<210> 917
 <211> 870
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 917

atgatcggcg	aacttggtgt	tttgttcgtg	atcgagcact	tcaagcaacg	cgctggcggg	60
atcgccccga	aagtcgctgc	ccaatttgtc	gatttcgctg	agcaggaaca	acgggtttct	120
tacgcctgct	tttgccatat	tctgcaaaat	cttgccgggc	atagagccga	tataggtacg	180
gcggtgcccc	cggatttcgc	tttcgtcgcg	cacgcgcgcc	aaggccatac	ggacatatatt	240
ccgccccgtt	gctttggcga	tggattcgcc	caaagaggtt	ttgcccacgc	ccggagggcc	300
gaccaaacac	agaatcggac	ctttgagctt	gtccatacgt	ttttggacgg	cgaggtattc	360
caaaatccgt	tctttgactt	tttcagggcc	gtagtggctg	gcattccagca	ccagtccggc	420
tttggcgatg	tctttgctga	cgcgggattt	tttcttcac	ggcagtcgga	gcagggtgtc	480
gatgtagtgt	cgtagcgagg	tggattcggc	agacatcggc	ggcatcattt	tgagtttttt	540
cagttcggac	aggcattttt	cttccgcttc	tttggtcata	ccgcctttt	tgatgcctgc	600
ctccaaggca	tccagttcgc	cgttttcgtc	ttcttcgccc	aattctttgt	gtatcgcttt	660
aatctgttcg	ttcagataat	attcgcgttg	ggatttttcc	atttggcggt	tgacgcgtcc	720
gcgtatgcgt	ttttcggcct	gcataatgtc	gagttcggat	tccagctttg	ccagcaggaa	780
ttccatccgt	ttgccgattt	cggaatctc	caaaatctgt	tggcgttgcg	ccagtttcaa	840
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<210> 918
 <211> 289
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 918

Met	Ile	Gly	Glu	Leu	Val	Val	Leu	Phe	Val	Ile	Glu	His	Phe	Lys	Gln
1				5				10						15	
Arg	Ala	Gly	Gly	Ile	Ala	Pro	Lys	Val	Ala	Ala	Gln	Phe	Val	Asp	Phe
	20						25						30		
Val	Glu	Gln	Glu	Gln	Arg	Val	Ser	Tyr	Ala	Cys	Phe	Cys	His	Ile	Leu
	35						40					45			
Gln	Asn	Leu	Ala	Gly	His	Arg	Ala	Asp	Ile	Gly	Thr	Ala	Val	Pro	Ala

50					55					60					
Asp	Phe	Ala	Phe	Val	Ala	His	Ala	Ala	Gln	Gly	His	Thr	Asp	Ile	Phe
65					70					75					80
Pro	Pro	Arg	Cys	Phe	Gly	Asp	Gly	Phe	Ala	Gln	Arg	Gly	Phe	Ala	His
			85						90					95	
Ala	Arg	Arg	Ala	Asp	Gln	Thr	Gln	Asn	Arg	Thr	Phe	Glu	Leu	Val	His
			100					105					110		
Thr	Phe	Leu	Asp	Gly	Glu	Val	Phe	Gln	Asn	Pro	Phe	Phe	Asp	Phe	Phe
		115					120					125			
Gln	Ala	Val	Val	Val	Gly	Ile	Gln	His	Gln	Ser	Gly	Phe	Gly	Asp	Val
	130					135					140				
Phe	Ala	Asp	Ala	Gly	Phe	Phe	Leu	Pro	Arg	Gln	Ser	Glu	Gln	Gly	Val
145					150					155					160
Asp	Val	Val	Ala	Tyr	Asp	Gly	Gly	Phe	Gly	Arg	His	Arg	Arg	His	His
			165						170					175	
Phe	Glu	Phe	Phe	Gln	Phe	Gly	Gln	Ala	Phe	Phe	Phe	Arg	Phe	Phe	Gly
			180					185					190		
His	Thr	Arg	Leu	Phe	Asp	Ala	Cys	Leu	Gln	Gly	Ile	Gln	Phe	Ala	Val
		195					200					205			
Phe	Val	Phe	Phe	Ala	Gln	Phe	Phe	Val	Tyr	Arg	Phe	Asn	Leu	Phe	Val
	210					215					220				
Gln	Ile	Ile	Phe	Ala	Leu	Gly	Phe	Phe	His	Leu	Ala	Phe	Asp	Ala	Ser
225					230					235					240
Ala	Tyr	Ala	Phe	Phe	Gly	Leu	His	Asn	Val	Glu	Phe	Gly	Phe	Gln	Leu
			245					250						255	
Cys	Gln	Gln	Glu	Phe	His	Pro	Phe	Ala	Asp	Phe	Gly	Asn	Leu	Gln	Asn
			260					265					270		
Leu	Leu	Ala	Leu	Arg	Gln	Phe	Gln	Leu	Gln	Met	Arg	Cys	Asp	Arg	Ile
		275					280					285			

Gly

<210> 919
 <211> 870
 <212> DNA
 <213> Neisseria meningitidis

<400> 919
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 atgcctcgg aagtcgttac ccaatttgtc gatttcgtcg agcaggaaca aggggttttt 120
 caccgaggct ttgccatat tctgcaaat cttaccgggc atagagccga tataggtgcg 180


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gcggtgtccc ctgatttcgc tttcgtcgcg cacgccgccc aaagccatgc ggacatatatt 240
ccgccccggt gctttggcga tggattcgcc caaagagggt ttgccacgc ccggagggcc 300
gaccaggcac agaatcgggc ctttgagttt gtccatacgt ttttggacgg cgaggtattc 360
caaaatccgt tctttgactt tttccaggcc gtagtggtcg gcatccagca ccagtccggc 420
tttggcgatg tctttgctga cgcgggattt tttcttccac ggcagctcga gcaaagtgtc 480
gatgtagttg cgtacgacgg tggattccgc agacatcggg ggcattcatt tgagcttttt 540
cagttcggac aggcattttt cttccgcttc tttggtcata cccgcctttt tgatatctgc 600
ttccaaggca tccagttcgc cgttttcgtc ttcttcgccc agttctttgt gtatcgcttt 660
aatctgttcg ttcagataat attcgcgctg ggatttttcc atttggcgtt tgacgcgtcc 720
gcgtatgcgt ttttcggcct gcataatgtc gagttcggat tccagctgtg ccagcaggaa 780
ttccatccgt ttgccgattt cgggaatttc caaaatctgt tggcgttcgc ccagtttcaa 840
ctgcaaatgc gctgcgaccg tatcggttag 870

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<210> 920
 <211> 289
 <212> PRT
 <213> Neisseria meningitidis

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<400> 920
Met Ile Gly Lys Leu Val Val Leu Phe Gly Ile Glu His Phe Glu Gln
  1             5             10             15

Arg Ala Gly Gly Ile Ala Ser Glu Val Val Thr Gln Phe Val Asp Phe
          20             25             30

Val Glu Gln Glu Gln Gly Val Phe His Ala Gly Phe Cys His Ile Leu
      35             40             45

Gln Asn Leu Thr Gly His Arg Ala Asp Ile Gly Ala Ala Val Ser Pro
  50             55             60

Asp Phe Ala Phe Val Ala His Ala Ala Gln Ser His Ala Asp Ile Phe
  65             70             75             80

Pro Pro Arg Cys Phe Gly Asp Gly Phe Ala Gln Arg Gly Phe Ala His
          85             90             95

Ala Arg Arg Ala Asp Gln Ala Gln Asn Arg Ala Phe Glu Phe Val His
      100             105             110

Thr Phe Leu Asp Gly Glu Val Phe Gln Asn Pro Phe Phe Asp Phe Phe
      115             120             125

Gln Ala Val Val Val Gly Ile Gln His Gln Ser Gly Phe Gly Asp Val
      130             135             140

Phe Ala Asp Ala Gly Phe Phe Leu Pro Arg Gln Leu Glu Gln Ser Val
      145             150             155             160

Asp Val Val Ala Tyr Asp Gly Gly Phe Arg Arg His Arg Trp His His
          165             170             175

Phe Glu Leu Phe Gln Phe Gly Gln Ala Phe Phe Phe Arg Phe Phe Gly
      180             185             190

His Thr Arg Leu Phe Asp Ile Cys Phe Gln Gly Ile Gln Phe Ala Val

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195

200

205

Phe Val Phe Phe Ala Gln Phe Phe Val Tyr Arg Phe Asn Leu Phe Val
 210 215 220

Gln Ile Ile Phe Ala Leu Gly Phe Phe His Leu Ala Phe Asp Ala Ser
 225 230 235 240

Ala Tyr Ala Phe Phe Gly Leu His Asn Val Glu Phe Gly Phe Gln Leu
 245 250 255

Cys Gln Gln Glu Phe His Pro Phe Ala Asp Phe Gly Asn Phe Gln Asn
 260 265 270

Leu Leu Ala Leu Arg Gln Phe Gln Leu Gln Met Arg Cys Asp Arg Ile
 275 280 285

Gly

<210> 921

<211> 870

<212> DNA

<213> Neisseria meningitidis

<400> 921

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 atcgccccgg aagtcgctan ccaatttgtc gatttcgctc agcaggaaca atgggttttt 120
 tacgccggct tttgccatat tctgcaaaat cttaccgggc atggagccga tataagggtgcg 180
 gcggtgtccc cggatttcgc tttcgtcgcg cacgccgccc aaagccatgc ggacatatat 240
 ccgccccgtt gctttggcga tggattcgcg caaagagggt ttgcccacgc ctggaggggc 300
 gaccaggcac agaatcgggc ctttgagttt gtccatacgt ttttggacgg cgagggtattc 360
 caaaatccgt tctttgactt tttccaggcc gtagtggtcg gtatccagca ccaatccggc 420
 tttggcgatg tctttgctga cgcgggattt tttcttccac ggcagttcga gcagggtgtc 480
 gatgtagttg cgtacgacgg tggattcggc agacatcggc ggcacatatt tgagcttttt 540
 cagttcggac aggcattttt cttccgcttc tttggtcata cccgcctttt tgatatctgc 600
 ttccaaggca tccagttcgc cgttttcgtc ttcttcgccc agttctttgt gtatcgcttt 660
 aatctgttcg ttcagataat attcgcgctg ggatttttcc atttggcggt tgacgcgctc 720
 gcgtatgcgt ttttcggcct gcataatgtc gagttcggat tccagctgtg ccagcaggaa 780
 ttccatccgt ttgccgattt cgggaatttc caaaatctgt tggcgttgcg ccagtttcaa 840
 ctgcaaatgc gctgcgaccg tatcggttag 870

<210> 922

<211> 289

<212> PRT

<213> Neisseria meningitidis

<400> 922

Met Ile Gly Glu Leu Val Val Leu Leu Gly Ile Lys His Phe Glu Gln
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Arg Ala Gly Gly Ile Ala Pro Glu Val Ala Xaa Gln Phe Val Asp Phe
 20 25 30

Val Glu Gln Glu Gln Trp Val Phe Tyr Ala Gly Phe Cys His Ile Leu

35					40					45					
Gln	Asn	Leu	Thr	Gly	His	Gly	Ala	Asp	Ile	Gly	Ala	Ala	Val	Ser	Pro
50						55					60				
Asp	Phe	Ala	Phe	Val	Ala	His	Ala	Ala	Gln	Ser	His	Ala	Asp	Ile	Phe
65						70					75				80
Pro	Pro	Arg	Cys	Phe	Gly	Asp	Gly	Phe	Ala	Gln	Arg	Gly	Phe	Ala	His
				85					90					95	
Ala	Trp	Arg	Ala	Asp	Gln	Ala	Gln	Asn	Arg	Ala	Phe	Glu	Phe	Val	His
			100					105					110		
Thr	Phe	Leu	Asp	Gly	Glu	Val	Phe	Gln	Asn	Pro	Phe	Phe	Asp	Phe	Phe
		115					120					125			
Gln	Ala	Val	Val	Val	Gly	Ile	Gln	His	Gln	Ser	Gly	Phe	Gly	Asp	Val
	130					135					140				
Phe	Ala	Asp	Ala	Gly	Phe	Phe	Leu	Pro	Arg	Gln	Phe	Glu	Gln	Gly	Val
145						150					155				160
Asp	Val	Val	Ala	Tyr	Asp	Gly	Gly	Phe	Gly	Arg	His	Arg	Arg	His	His
				165					170					175	
• Phe	Glu	Leu	Phe	Gln	Phe	Gly	Gln	Ala	Phe	Phe	Phe	Arg	Phe	Phe	Gly
			180					185					190		
His	Thr	Arg	Leu	Phe	Asp	Ile	Cys	Phe	Gln	Gly	Ile	Gln	Phe	Ala	Val
		195					200					205			
Phe	Val	Phe	Phe	Ala	Gln	Phe	Phe	Val	Tyr	Arg	Phe	Asn	Leu	Phe	Val
	210					215					220				
Gln	Ile	Ile	Phe	Ala	Leu	Gly	Phe	Phe	His	Leu	Ala	Phe	Asp	Ala	Ser
225						230					235				240
Ala	Tyr	Ala	Phe	Phe	Gly	Leu	His	Asn	Val	Glu	Phe	Gly	Phe	Gln	Leu
				245					250					255	
Cys	Gln	Gln	Glu	Phe	His	Pro	Phe	Ala	Asp	Phe	Gly	Asn	Phe	Gln	Asn
			260					265					270		
Leu	Leu	Ala	Leu	Arg	Gln	Phe	Gln	Leu	Gln	Met	Arg	Cys	Asp	Arg	Ile
		275					280					285			

Gly

<210> 923

<211> 333

<212> DNA

<213> Neisseria gonorrhoeae

<400> 923

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 aaggcggtgc agaggttgac ggcgagccac atccagcggg ttttgacgga atccaagacg 180
 ggggcgaaca ggtcttctc ttcctgcaaa cctgccatgt tcaacatatc cgcttcggat 240
 tcttcgcgga tcacgtccac catctcgtcg atggtaatcc tgccgatgag ctttttggtt 300
 tcatcaacga cgggcgcggg aaccaagtcg tag 333

<210> 924
 <211> 110
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 924
 Met Val Ile Val Trp Leu Pro Glu Leu Pro Pro Met Pro Ala Thr Met
 1 5 10 15
 Gly Ile Ser Ala Ala Ser Ala Thr Ile Phe Ser Ile Leu Pro Ser Asn
 20 25 30
 Ala Pro Met Thr Arg Leu Ala Arg Lys Ala Val Gln Arg Leu Thr Ala
 35 40 45
 Ser His Ile Gln Arg Phe Leu Thr Glu Ser Lys Thr Gly Ala Asn Arg
 50 55 60
 Ser Ser Ser Ser Cys Lys Pro Ala Met Phe Asn Ile Ser Ala Ser Asp
 65 70 75 80
 Ser Ser Arg Ile Thr Ser Thr Ile Ser Ser Met Val Ile Leu Pro Met
 85 90 95
 Ser Phe Leu Phe Ser Ser Thr Thr Gly Ala Val Thr Lys Ser
 100 105 110

<210> 925
 <211> 333
 <212> DNA
 <213> Neisseria meningitidis

<400> 925
 atggtaatcg tctggttgcc cgagttaccg cctatgccgg cgacgatggg catcagcgcg 60
 gygagtgcga cgattttttc gatgtgcct tcaaacgcgc cgataacacg gytggcgagg 120
 aaggcggtgc agaggttgac ggcgagccac atccagyggg ttttcaccga atcccacacg 180
 ggggcgaaya ggtcttctc ttcctgcaaa cccgccatat tcagcatatc cgcttcggat 240
 tcttcgcgga tcacgtccac catctcgtcg atggtaatcc tgccgatgag ctttttggtt 300
 tcatcgacga cgggcgcggg aaccaagtcg tag 333

<210> 926
 <211> 110
 <212> PRT
 <213> Neisseria meningitidis

<400> 926
 Met Val Ile Val Trp Leu Pro Glu Leu Pro Pro Met Pro Ala Thr Met

1	5	10	15
Gly Ile Ser Ala Xaa Ser Ala Thr Ile Phe Ser Met Leu Pro Ser Asn			
20	25	30	
Ala Pro Ile Thr Arg Leu Ala Arg Lys Ala Val Gln Arg Leu Thr Ala			
35	40	45	
Ser His Ile Gln Xaa Phe Phe Thr Glu Ser His Thr Gly Ala Asn Arg			
50	55	60	
Ser Ser Ser Ser Cys Lys Pro Ala Ile Phe Ser Ile Ser Ala Ser Asp			
65	70	75	80
Ser Ser Arg Ile Thr Ser Thr Ile Ser Ser Met Val Ile Leu Pro Met			
85	90	95	
Ser Phe Leu Phe Ser Ser Thr Thr Gly Ala Val Thr Lys Ser			
100	105	110	

<210> 927
 <211> 333
 <212> DNA
 <213> Neisseria meningitidis

<400> 927
 atggtaatcg tctggttgcc cgagttaccg cctatgccgg cgacgatggg catcagcgcg 60
 gcgagtgcga cgattttttc gatgctgcct tcaaacgcgc cgataaacg gctggcgagg 120
 aaggcgggtgc agaggttgac ggcgagccac atccagcggg ttttgacgga atccaagacg 180
 ggggcgaata agtcttcttc ttcttgcaaa cccgccatat tcaacatatc cgcttcggat 240
 tcttcgcgga tcacgtccac catttcgtca acggtcaccc tgccgatgag ctttttgttt 300
 tcacgcacga cgggcgcggg aaccaagtca tag 333

<210> 928
 <211> 110
 <212> PRT
 <213> Neisseria meningitidis

<400> 928
Met Val Ile Val Trp Leu Pro Glu Leu Pro Pro Met Pro Ala Thr Met
1 5 10 15
Gly Ile Ser Ala Ala Ser Ala Thr Ile Phe Ser Met Leu Pro Ser Asn
20 25 30
Ala Pro Ile Thr Arg Leu Ala Arg Lys Ala Val Gln Arg Leu Thr Ala
35 40 45
Ser His Ile Gln Arg Phe Leu Thr Glu Ser Lys Thr Gly Ala Asn Lys
50 55 60
Ser Ser Ser Ser Cys Lys Pro Ala Ile Phe Asn Ile Ser Ala Ser Asp
65 70 75 80
Ser Ser Arg Ile Thr Ser Thr Ile Ser Ser Thr Val Thr Leu Pro Met

85

90

95

Ser Phe Leu Phe Ser Ser Thr Thr Gly Ala Val Thr Lys Ser
 100 105 110

<210> 929

<211> 834

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 929

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 tatacgcaaa acgcgcttca ggaaataaat cagattattc ccagacgcc ttcaggcttc 120
 cttccgtgcc accgtaacca tagccgggcg caacacacgg tcggacaggg tataaccctt 180
 cttcatcaca ccaaccacgg tattgggttc ctgctcactg gccaccgctt gcatcgcttg 240
 atggatattc ggatcgagct tatcgccgcg tttaggattg atttccttga tttgctggc 300
 atcaaacgcc ttctgcaact cattcaaagt catctgcaca cccattttca gcgcacgaa 360
 attaccgctc tgatccaaa gcgccatttc cagataatcc ttgaccggca acattttcac 420
 ggcaaacctt tgtccggcga acttggtcgt atcggaatt tctgctggtt ggccggcgcg 480
 cagggttttg tggtttgcca aagcgcgcag ttgttcgtct ttcaactgog cttccagctc 540
 ggcaatccgc gcctgcaaat cctcataagc cggctcggcg gcagcctggt cctgtacacc 600
 gtccgcattt cctactgtct cgacgggttc caccgcctcc acattttcaa ccgctttctt 660
 actggttttg tgcgtgtgtct gttcgctcat atcgatatcc tcaaaacaaa ttggaaatca 720
 aaatccggtt attaccggag caagataagg acattttcaa gaaacttcaa gcaaaggcag 780
 gaaatttcac atccgcgcgc gaatacccta ccgcaaaaac catataaacg gtaa 834

<210> 930

<211> 277

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 930

Met Pro Pro Glu Ala Arg Pro Ala Gly Ser Asp Gly Ile Ala Ala Leu
 1 5 10 15
 Leu Arg Ser Val Tyr Thr Gln Asn Ala Leu Gln Glu Ile Asn Gln Ile
 20 25 30
 Ile Pro Gln Thr Pro Ser Gly Phe Leu Pro Cys His Arg Asn His Ser
 35 40 45
 Arg Ala Gln His Thr Val Gly Gln Gly Ile Thr Leu Leu His His Thr
 50 55 60
 Asn His Gly Ile Gly Phe Leu Leu Thr Gly His Arg Leu His Arg Leu
 65 70 75 80
 Met Asp Ile Arg Ile Glu Leu Ile Ala Arg Phe Arg Ile Asp Phe Leu
 85 90 95
 Asp Leu Arg Gly Ile Lys Arg Leu Leu Gln Leu Ile Gln Ser His Leu
 100 105 110
 His Thr His Phe Gln Arg Ile Glu Ile Thr Ala Leu Ile Gln Lys Arg
 115 120 125

His Phe Gln Ile Ile Leu Asp Arg Gln His Phe His Gly Lys Leu Leu
 130 135 140

Ser Gly Glu Leu Val Arg Ile Gly Asn Phe Leu Leu Val Ala Ala Ala
 145 150 155 160

Gln Val Leu Leu Val Cys Gln Ser Ala Gln Leu Phe Val Phe Gln Leu
 165 170 175

Arg Phe Gln Leu Gly Asn Pro Arg Leu Gln Ile Leu Ile Ser Arg Leu
 180 185 190

Gly Gly Ser Leu Phe Leu Tyr Thr Val Arg Ile Ser Tyr Cys Leu Asp
 195 200 205

Gly Phe His Arg Leu His Ile Phe Asn Arg Phe Phe Thr Val Leu Leu
 210 215 220

Leu Cys Leu Phe Ala His Ile Val Ser Leu Lys Thr Asn Trp Lys Ser
 225 230 235 240

Lys Ser Gly Tyr Tyr Pro Ser Lys Ile Arg Thr Phe Ser Arg Asn Phe
 245 250 255

Lys Gln Arg Gln Glu Ile Ser His Pro Pro Pro Asn Thr Leu Pro Gln
 260 265 270

Lys Pro Tyr Lys Arg
 275

<210> 931
 <211> 831
 <212> DNA
 <213> Neisseria meningitidis

<400> 931
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 tatacgcaaa acgcgcttca ggaaataaat cagattattc cccagacgcc ttcaggcttc 120
 cttctgcgcc accgtaacca tagccgggcg caacacgcgg tcggacagcg tataaccctt 180
 cttcatcaca cccaccacgg tatteggctc ctgttcgctt gccaccgcct gcatcgcttg 240
 atggatattc ggatcgagct tatcgccgcg tttagggttg atttccttga tttgcgtagc 300
 atcaaattgct ttctgcaact cgttcaaagt catctgcacg cccattttca gcgcatcgaa 360
 attgccgctc tgatccaaaa gcgccatttc cagataatcc ttgaccggca gcatttccac 420
 ggcaaaacttc tgtccggcga acttggtgct atccgcaatt tyctgctggt ggcggcggcg 480
 caggttttgc tcgttttgcca aagcgcgctg ctcgctcttc aactgcgttt ccagctcggc 540
 aatccgcgcc tgcaaatcct cataagccgg ctctgcggca gcctgttctt gcacaccgtc 600
 cgcattttcct actgtttcga cggtttccac cgctccaca ttttcaaccg cttcttctact 660
 gttttgctgc tgtgtctggt cgctcatatc gtatccctta aaacaaattg gaaatcaaaa 720
 tccagttatt acccgcgcaa gataaggaca ttttcaagaa acttcaakca aaakcagaga 780
 atttcaaatt cattttcaaa tcccctaccg aaaaaataat atagacggt a 831

<210> 932
 <211> 276
 <212> PRT

<213> Neisseria meningitidis

<400> 932

Met Pro Ser Glu Ala Arg Gln Ala Gly Ser Asp Gly Ile Ala Ala Leu
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Leu Arg Ser Val Tyr Thr Gln Asn Ala Leu Gln Glu Ile Asn Gln Ile
20 25 30

Ile Pro Gln Thr Pro Ser Gly Phe Leu Leu Arg His Arg Asn His Ser
35 40 45

Arg Ala Gln His Ala Val Gly Gln Arg Ile Thr Leu Leu His His Thr
50 55 60

His His Gly Ile Arg Leu Leu Phe Ala Cys His Arg Leu His Arg Leu
65 70 75 80

Met Asp Ile Arg Ile Glu Leu Ile Ala Arg Phe Arg Val Asp Phe Leu
85 90 95

Asp Leu Arg Ser Ile Lys Cys Phe Leu Gln Leu Val Gln Ser His Leu
100 105 110

His Ala His Phe Gln Arg Ile Glu Ile Ala Ala Leu Ile Gln Lys Arg
115 120 125

His Phe Gln Ile Ile Leu Asp Arg Gln His Phe His Gly Lys Leu Leu
130 135 140

Ser Gly Glu Leu Val Arg Ile Arg Asn Phe Leu Leu Val Ala Ala Ala
145 150 155 160

Gln Val Leu Leu Val Cys Gln Ser Ala Leu Leu Val Phe Gln Leu Arg
165 170 175

Phe Gln Leu Gly Asn Pro Arg Leu Gln Ile Leu Ile Ser Arg Leu Cys
180 185 190

Gly Ser Leu Phe Leu His Thr Val Arg Ile Ser Tyr Cys Phe Asp Gly
195 200 205

Phe His Arg Leu His Ile Phe Asn Arg Phe Phe Thr Val Leu Leu Leu
210 215 220

Cys Leu Phe Ala His Ile Val Ser Leu Lys Thr Asn Trp Lys Ser Lys
225 230 235 240

Ser Ser Tyr Tyr Pro Arg Lys Ile Arg Thr Phe Ser Arg Asn Phe Xaa
245 250 255

Gln Xaa Gln Arg Ile Ser Asn Ser Phe Ser Asn Pro Leu Pro Lys Lys
260 265 270

Xaa Tyr Arg Arg
275

<210> 933
 <211> 834
 <212> DNA
 <213> Neisseria meningitidis

<400> 933
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 cttctgtgcc accgtaacca tagccgggog caacacgcgg tcggacagcg tataaccctt 180
 cttcatcacg cccaccacgg tattgggttc ctgttcgctt gccaccgcct gcacgcgctg 240
 atggatattc ggatcgagct tatcgccgcg tttaggattg atttccttga tttgcgtagc 300
 atcaaatgct ttctgcaact cgttcaaagt catctgcacg cccattttca gcgcatcgaa 360
 attgccgctc tgatccaaaa gcgccatttc cagataatcc ttgaccggca gcatttccac 420
 ggcaaacctc tgtccggcga acttgtgcgt atccgcaatt tcctgctggt ggcggcggcg 480
 cagggtttgc tcgtttgcca aagcgcgcag ctgctcgtct ttcaactgcg cttccagctc 540
 ggcaatccgc gcctgcaaat cctcataagc cggctctgcg gcagcctggt cctgcacacc 600
 gtcgcgattt cctactgtct cgacgggttc caccgcctcc acattttcaa ccgcttcttc 660
 aactgtttgc tgctgtgtct gttcgctcat atcgatatcc ttaaaacaaa ttggaaatca 720
 aaatccagtt attaccgcg caagataagg acattttcaa gaaacttcaa gcaaaggcag 780
 agaatttcaa attcattttc aaatccccta ccgaaaaaat aatatagacg gtaa 834

<210> 934
 <211> 276
 <212> PRT
 <213> Neisseria meningitidis

<400> 934
 Met Pro Ser Glu Ala Arg Gln Ala Gly Ser Asp Gly Ile Ala Ala Leu
 1 5 10 15
 Leu Arg Ser Val Tyr Thr Gln Asn Ala Leu Gln Glu Ile Asn Gln Ile
 20 25 30
 Ile Pro Gln Thr Pro Ser Gly Phe Leu Leu Cys His Arg Asn His Ser
 35 40 45
 Arg Ala Gln His Ala Val Gly Gln Arg Ile Thr Leu Leu His His Ala
 50 55 60
 His His Gly Ile Gly Phe Leu Phe Ala Cys His Arg Leu His Arg Leu
 65 70 75 80
 Met Asp Ile Arg Ile Glu Leu Ile Ala Arg Phe Arg Ile Asp Phe Leu
 85 90 95
 Asp Leu Arg Ser Ile Lys Cys Phe Leu Gln Leu Val Gln Ser His Leu
 100 105 110
 His Ala His Phe Gln Arg Ile Glu Ile Ala Ala Leu Ile Gln Lys Arg
 115 120 125
 His Phe Gln Ile Ile Leu Asp Arg Gln His Phe His Gly Lys Leu Leu
 130 135 140
 Ser Gly Glu Leu Val Arg Ile Arg Asn Phe Leu Leu Val Ala Ala Ala

145	150	155	160
Gln Val Leu Leu Val Cys Gln Ser Ala Gln Leu Leu Val Phe Gln Leu	165	170	175
Arg Phe Gln Leu Gly Asn Pro Arg Leu Gln Ile Leu Ile Ser Arg Leu	180	185	190
Cys Gly Ser Leu Phe Leu His Thr Val Arg Ile Ser Tyr Cys Leu Asp	195	200	205
Gly Phe His Arg Leu His Ile Phe Asn Arg Phe Phe Thr Val Leu Leu	210	215	220
Leu Cys Leu Phe Ala His Ile Val Ser Leu Lys Thr Asn Trp Lys Ser	225	230	235
Lys Ser Ser Tyr Tyr Pro Arg Lys Ile Arg Thr Phe Ser Arg Asn Phe	245	250	255
Lys Gln Arg Gln Arg Ile Ser Asn Ser Phe Ser Asn Pro Leu Pro Lys	260	265	270
Lys Tyr Arg Arg	275		

<210> 935
 <211> 834
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 935
 atgccgcctg aagcccggcc ggccgggttca gacggcattg ccgctttact tcgatcggtt 60
 tatacgcaaa acgcgcttca ggaaataaat cagattattc cccagacgcc ttcaggcttc 120

cttccgtgcc accgtaacca tagccggggcg caacacacgg tcggacaggg tataaccctt 180
 cttcatcaca ccaaccacgg tattgggttc ctgctcactg gccaccgcct gcacgcctg 240
 atggatattc ggatcgagct tatcgcccg cttaggattg atttccttga tttgcgtggc 300
 atcaaacgcc ttctgcaact cattcaaagt catctgcaca cccattttca gcgcatcgaa 360
 attaccgctc tgatccaaaa gcgccatttc cagataatcc ttgaccggca acattttccac 420
 ggcaaacttc tgtccggcga acttgtgcgt atcggcaatt tcctgctggt ggccggcgcg 480
 caggttttgc tcgtttgcc aagcgcgcag ttgttcgtct ttcaactgcg cttccagctc 540
 ggcaatccgc gcctgcaaat cctcataagc cggctcggcg gcagcctgtt cctgtacacc 600
 gtccgcattt cctactgtct cgacggttc caccgcctcc acattttcaa ccgcttcttc 660
 actgttttgc tgctgtgtct gttcgctcat atcgtatccc tcaaaacaaa ttggaaatca 720
 aaatccggtt attacccgag caagataagg acattttcaa gaaacttcaa gcaaaggcag 780
 gaaatttcac atccgcgcgc gaatacccta ccgcaaaaac catataaacg gtaa 834

<210> 936
 <211> 277
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 936
 Met Pro Pro Glu Ala Arg Pro Ala Gly Ser Asp Gly Ile Ala Ala Leu

1	5	10	15
Leu Arg Ser Val Tyr Thr Gln Asn Ala Leu Gln Glu Ile Asn Gln Ile	20	25	30
Ile Pro Gln Thr Pro Ser Gly Phe Leu Pro Cys His Arg Asn His Ser	35	40	45
Arg Ala Gln His Thr Val Gly Gln Gly Ile Thr Leu Leu His His Thr	50	55	60
Asn His Gly Ile Gly Phe Leu Leu Thr Gly His Arg Leu His Arg Leu	65	70	75
Met Asp Ile Arg Ile Glu Leu Ile Ala Arg Phe Arg Ile Asp Phe Leu	85	90	95
Asp Leu Arg Gly Ile Lys Arg Leu Leu Gln Leu Ile Gln Ser His Leu	100	105	110
His Thr His Phe Gln Arg Ile Glu Ile Thr Ala Leu Ile Gln Lys Arg	115	120	125
His Phe Gln Ile Ile Leu Asp Arg Gln His Phe His Gly Lys Leu Leu	130	135	140
Ser Gly Glu Leu Val Arg Ile Gly Asn Phe Leu Leu Val Ala Ala Ala	145	150	155
Gln Val Leu Leu Val Cys Gln Ser Ala Gln Leu Phe Val Phe Gln Leu	165	170	175
Arg Phe Gln Leu Gly Asn Pro Arg Leu Gln Ile Leu Ile Ser Arg Leu	180	185	190
Gly Gly Ser Leu Phe Leu Tyr Thr Val Arg Ile Ser Tyr Cys Leu Asp	195	200	205
Gly Phe His Arg Leu His Ile Phe Asn Arg Phe Phe Thr Val Leu Leu	210	215	220
Leu Cys Leu Phe Ala His Ile Val Ser Leu Lys Thr Asn Trp Lys Ser	225	230	235
Lys Ser Gly Tyr Tyr Pro Ser Lys Ile Arg Thr Phe Ser Arg Asn Phe	245	250	255
Lys Gln Arg Gln Glu Ile Ser His Pro Pro Pro Asn Thr Leu Pro Gln	260	265	270
Lys Pro Tyr Lys Arg	275		

<210> 937
 <211> 819
 <212> DNA

<213> Neisseria meningitidis

<400> 937

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atgccgtctg aagcccgaca ggcgggttca gacggcattg ccgctttact tcgatcgggtt 60
tatacgcaaa acgcgcttca ggaaataaat cagattattc cccagacgcc ttcaggcttc 120
cttctgcgcc accgtaacca tagccgggcg caacacgcgg tcggacagcg tataaccctt 180
cttcatcaca cccaccacgg tattcggtc ctgttcgctt gccaccgcct gcatcgctg 240
atggatattc ggatcgagct tatcgccgcg tttaggggtg atttccttga tttgcgtagc 300
atcaaattgt ttctgcaact cgttcaaagt catctgcacg cccattttca gcgcatcgaa 360
attgccgctc tgatccaaaa gcgccatttc cagataatcc ttgaccggca gcattttcac 420
ggcaaacttc tgcggcgga acttggtgct atccgcaatt tyctgctggt ggcgggcgcg 480
cagggttttg tcgtttgcc aagcgcgctg ctgctcttcc aactgcgttt ccagctcggc 540
aatccgcgcc tgcaaactct cataagccgg ctctgcggca gcctgttcc gcacaccgtc 600
cgcatttcct actgtttcga cggtttccac cgctccaca ttttcaaccg cttcttcaact 660
gttttgctgc tgtgtctgtt cgctcatatc gtatccctta aaacaaattg gaaatcaaaa 720
tccagttatt acccgcgcaa gataaggaca ttttcaagaa acttcaakca aaakcagaga 780
atttcaaatt cattttcaaa tcccctaccg aaaaaataa 819
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<210> 938

<211> 272

<212> PRT

<213> Neisseria meningitidis

<400> 938

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Met Pro Ser Glu Ala Arg Gln Ala Gly Ser Asp Gly Ile Ala Ala Leu
  1              5              10              15
Leu Arg Ser Val Tyr Thr Gln Asn Ala Leu Gln Glu Ile Asn Gln Ile
      20              25              30
Ile Pro Gln Thr Pro Ser Gly Phe Leu Leu Arg His Arg Asn His Ser
      35              40              45
Arg Ala Gln His Ala Val Gly Gln Arg Ile Thr Leu Leu His His Thr
      50              55              60
His His Gly Ile Arg Leu Leu Phe Ala Cys His Arg Leu His Arg Leu
      65              70              75              80
Met Asp Ile Arg Ile Glu Leu Ile Ala Arg Phe Arg Val Asp Phe Leu
      85              90              95
Asp Leu Arg Ser Ile Lys Cys Phe Leu Gln Leu Val Gln Ser His Leu
      100             105             110
His Ala His Phe Gln Arg Ile Glu Ile Ala Ala Leu Ile Gln Lys Arg
      115             120             125
His Phe Gln Ile Ile Leu Asp Arg Gln His Phe His Gly Lys Leu Leu
      130             135             140
Ser Gly Glu Leu Val Arg Ile Arg Asn Phe Leu Leu Val Ala Ala Ala
      145             150             155             160
Gln Val Leu Leu Val Cys Gln Ser Ala Leu Leu Val Phe Gln Leu Arg
      165             170             175
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Phe Gln Leu Gly Asn Pro Arg Leu Gln Ile Leu Ile Ser Arg Leu Cys
 180 185 190
 Gly Ser Leu Phe Leu His Thr Val Arg Ile Ser Tyr Cys Phe Asp Gly
 195 200 205
 Phe His Arg Leu His Ile Phe Asn Arg Phe Phe Thr Val Leu Leu Leu
 210 215 220
 Cys Leu Phe Ala His Ile Val Ser Leu Lys Thr Asn Trp Lys Ser Lys
 225 230 235 240
 Ser Ser Tyr Tyr Pro Arg Lys Ile Arg Thr Phe Ser Arg Asn Phe Xaa
 245 250 255
 Gln Xaa Gln Arg Ile Ser Asn Ser Phe Ser Asn Pro Leu Pro Lys Lys
 260 265 270

<210> 939
 <211> 822
 <212> DNA
 <213> Neisseria meningitidis

<400> 939
 atgccgtctg aagcccgaca ggcggggttca gacggcattg ccgctttact tcgatcgggtt 60
 tatacgcaaa acgcgcttca ggaaataaat cagattattc cccagacgcc ttcaggcttc 120
 cttctgtgcc accgtaacca tagccgggcg caacacgcgg tcggacagcg tataaccctt 180
 cttcatcacg cccaccacgg tattgggttc ctgttcgctt gccaccgcct gcacgcctg 240
 atggatattc ggatcgagct tatcgccgc tttaggattg atttccttga tttgcgtagc 300
 atcaaatgct ttctgcaact cgttcaaagt catctgcacg cccattttca gcgcacgaa 360
 attgcgcctc tgatccaaaa gcgccatttc cagataatcc ttgaccggca gcatttccac 420
 ggcaaaacttc tgtccggcga acttgtgcgt atccgcaatt tcctgctggt ggcgggcg 480
 caggttttgc tcgtttgcc aagcgcgcag ctgctcgtct ttcaactgcg cttccagctc 540
 ggcaatccgc gcctgcaaat cctcataagc cggtctgcg gcagcctggt cctgcacacc 600
 gtccgcattt cctactgtct cgacggtttc caccgcctcc acattttcaa ccgcttcttc 660
 actgttttgc tgctgtgtct gttcgctcat atcgtatccc ttaaaacaaa ttggaaatca 720
 aaatccagtt attaccgcg caagataagg acattttcaa gaaacttcaa gcaaaggcag 780
 agaatttcaa attcattttc aaatccccta ccgaaaaaat aa 822

<210> 940
 <211> 273
 <212> PRT
 <213> Neisseria meningitidis

<400> 940
 Met Pro Ser Glu Ala Arg Gln Ala Gly Ser Asp Gly Ile Ala Ala Leu
 1 5 10 15
 Leu Arg Ser Val Tyr Thr Gln Asn Ala Leu Gln Glu Ile Asn Gln Ile
 20 25 30

Ile Pro Gln Thr Pro Ser Gly Phe Leu Leu Cys His Arg Asn His Ser
 35 40 45
 Arg Ala Gln His Ala Val Gly Gln Arg Ile Thr Leu Leu His His Ala
 50 55 60
 His His Gly Ile Gly Phe Leu Phe Ala Cys His Arg Leu His Arg Leu
 65 70 75 80
 Met Asp Ile Arg Ile Glu Leu Ile Ala Arg Phe Arg Ile Asp Phe Leu
 85 90 95
 Asp Leu Arg Ser Ile Lys Cys Phe Leu Gln Leu Val Gln Ser His Leu
 100 105 110
 His Ala His Phe Gln Arg Ile Glu Ile Ala Ala Leu Ile Gln Lys Arg
 115 120 125
 His Phe Gln Ile Ile Leu Asp Arg Gln His Phe His Gly Lys Leu Leu
 130 135 140
 Ser Gly Glu Leu Val Arg Ile Arg Asn Phe Leu Leu Val Ala Ala Ala
 145 150 155 160
 Gln Val Leu Leu Val Cys Gln Ser Ala Gln Leu Leu Val Phe Gln Leu
 165 170 175
 Arg Phe Gln Leu Gly Asn Pro Arg Leu Gln Ile Leu Ile Ser Arg Leu
 180 185 190
 Cys Gly Ser Leu Phe Leu His Thr Val Arg Ile Ser Tyr Cys Leu Asp
 195 200 205
 Gly Phe His Arg Leu His Ile Phe Asn Arg Phe Phe Thr Val Leu Leu
 210 215 220
 Leu Cys Leu Phe Ala His Ile Val Ser Leu Lys Thr Asn Trp Lys Ser
 225 230 235 240
 Lys Ser Ser Tyr Tyr Pro Arg Lys Ile Arg Thr Phe Ser Arg Asn Phe
 245 250 255
 Lys Gln Arg Gln Arg Ile Ser Asn Ser Phe Ser Asn Pro Leu Pro Lys
 260 265 270

Lys

<210> 941
 <211> 510
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 941
 atgtacgggc ggaacggtag tactcaagcg gccgttgcc tgcgttttcga ccagacacag 60
 cgtgcccgtt tcggcaacgg cgaagtttac gccgctcaag ccgacatcgg cagtgtctgta 120

aatatcgcgc agggctttgc gggcgaatcc ggtcagttgg tccacgtcgt ctgtaagcgg 180
tgtgccgagg ttttggtgga acagttcgct gacctgttct ttggttttat ggattgcggg 240
catcacgata tgggtcgggt tttcgctgc catttggacg ataaactcgc ccaagtcgct 300
ttccacggcc ttaatgcctt ttgcttcaag ataatgggtc agctcgattt cttcgctgac 360
catggatttg cttttgacca tcagcttgcc gtttttggct gtgatgatgt cgtggataat 420
ttggcaggct tcggcagggg tttccgcca gtgtactttc acgccaact tagtcagggt 480
ttcttccaac tgctccagca gcgcgggtaa 510

<210> 942
<211> 169
<212> PRT
<213> *Neisseria gonorrhoeae*

<400> 942
Met Tyr Gly Arg Asn Gly Ser Thr Gln Ala Ala Val Ala Phe Val Phe
1 5 10 15
Asp Gln Thr Gln Arg Ala Arg Phe Gly Asn Gly Glu Val Tyr Ala Ala
20 25 30
Gln Ala Asp Ile Gly Ser Ala Val Asn Ile Ala Gln Gly Phe Ala Gly
35 40 45
Glu Ser Gly Gln Leu Val His Val Val Cys Lys Arg Cys Ala Glu Val
50 55 60
Leu Val Glu Gln Phe Ala Asp Leu Phe Phe Gly Phe Met Asp Cys Gly
65 70 75 80
His His Asp Met Gly Arg Phe Phe Ala Cys His Leu Asp Asp Lys Leu
85 90 95
Ala Gln Val Ala Phe His Arg Leu Asn Ala Phe Cys Phe Lys Ile Met
100 105 110
Val Gln Leu Asp Phe Phe Ala Asp His Gly Phe Ala Phe Asp His Gln
115 120 125
Leu Ala Val Phe Gly Cys Asp Asp Val Val Asp Asn Leu Ala Gly Phe
130 135 140
Gly Arg Gly Phe Arg Pro Val Tyr Phe His Ala Gln Leu Ser Gln Val
145 150 155 160
Phe Phe Gln Leu Leu Gln Gln Arg Gly
165

<210> 943
<211> 449
<212> DNA
<213> *Neisseria meningitidis*

<400> 943
atgcacgggc ggtacggtgg tactcaagcg accgttgctt cgttttccac cagacacagc 60
gtacctgttt cagcaacggc aaagtttacg ccaactcaaac cgacatcggc agtgctgtaa 120

atatcgcgca gtgctttacg ggcgaagccg gtcagttggt ctacatcgtc tgtcagcggc 180
 gtaccgaggt tttggtggaa cagttcgtca acctgttctt tggttttgtg gatagcaggc 240
 atcacgatat gggtcgggtt ttcgcctgcc atttggacga tgaactcgcc caagtcgctt 300
 tctaccgctt taatgcyttt tgcttcaaga taatgrttca gctcgatttc ctcgctgacc 360
 atcgatttgc ctttgaccat cagcttgccg tttttggctg tgatgatgtc gtggataatt 420
 tggcaggcctt cggtcggggg ttctgcccc 449

<210> 944

<211> 150

<212> PRT

<213> Neisseria meningitidis

<400> 944

Met His Gly Arg Tyr Gly Gly Thr Gln Ala Thr Val Ala Phe Val Phe
 1 5 10 15

His Gln Thr Gln Arg Thr Cys Phe Ser Asn Gly Lys Val Tyr Ala Thr
 20 25 30

Gln Thr Asp Ile Gly Ser Ala Val Asn Ile Ala Gln Cys Phe Thr Gly
 35 40 45

Glu Ala Gly Gln Leu Val Tyr Ile Val Cys Gln Arg Arg Thr Glu Val
 50 55 60

Leu Val Glu Gln Phe Ala Asn Leu Phe Phe Gly Phe Val Asp Ser Arg
 65 70 75 80

His His Asp Met Gly Arg Phe Phe Ala Cys His Leu Asp Asp Glu Leu
 85 90 95

Ala Gln Val Ala Phe Tyr Arg Phe Asn Ala Phe Cys Phe Lys Ile Met
 100 105 110

Xaa Gln Leu Asp Phe Leu Ala Asp His Arg Phe Ala Phe Asp His Gln
 115 120 125

Leu Ala Val Phe Gly Cys Asp Asp Val Val Asp Asn Leu Ala Gly Phe
 130 135 140

Gly Arg Gly Phe Cys Pro
 145 150

<210> 945

<211> 501

<212> DNA

<213> Neisseria meningitidis

<400> 945

atgcacgggc ggaacggtgg tactcaagcg accgttgcct tcgtttttcca ccagacacag 60
 cgtacctgtt tcagcaacgg cgaagttcac gccactcaaa ccgacatcgg cagtgcgtga 120
 aatatcgcgc agtgctttac gggcgaagcc ggtcagttgg tctacgtcgt ccgttaacgg 180
 tgtgccgagg ttttggtgga acagttcgct aacctgttct ttggttttat ggattgcggg 240
 catcacgata tgggtcgggt tttcacctgc catttggaag atgaactcgc ccaagtcgct 300
 ttccaccgct ttaatgcctt ttgcttcaag ataatggttc agctcgattt cctcgctgac 360

catcgatttg cctttgacca tcagcttgcc gtttttggct gtgatgatgt cgtggatgat 420
 ttcgcagget tcggccggtg tttccgccca gtgtactttt acgcccact tggtcaggtt 480
 ttcttccagc tgctccagca g 501

<210> 946
 <211> 166
 <212> PRT
 <213> Neisseria meningitidis

<400> 946
 Met His Gly Arg Asn Gly Gly Thr Gln Ala Thr Val Ala Phe Val Phe
 1 5 10 15
 His Gln Thr Gln Arg Thr Cys Phe Ser Asn Gly Glu Val His Ala Thr
 20 25 30
 Gln Thr Asp Ile Gly Ser Ala Val Asn Ile Ala Gln Cys Phe Thr Gly
 35 40 45
 Glu Ala Gly Gln Leu Val Tyr Val Val Arg Arg Cys Ala Glu Val Leu
 50 55 60
 Val Glu Gln Phe Ala Asn Leu Phe Phe Gly Phe Met Asp Cys Gly His
 65 70 75 80
 His Asp Met Gly Arg Phe Phe Thr Cys His Leu Asp Asp Glu Leu Ala
 85 90 95
 Gln Val Ala Phe His Arg Phe Asn Ala Phe Cys Phe Lys Ile Met Val
 100 105 110
 Gln Leu Asp Phe Leu Ala Asp His Arg Phe Ala Phe Asp His Gln Leu
 115 120 125
 Ala Val Phe Gly Cys Asp Asp Val Val Asp Asp Phe Ala Gly Phe Gly
 130 135 140
 Arg Cys Phe Arg Pro Val Tyr Phe Tyr Ala Gln Leu Gly Gln Val Phe
 145 150 155 160
 Phe Gln Leu Leu Gln Gln
 165

<210> 947
 <211> 981
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 947
 atgaaacgta aaatgctaaa cgtaccaaag ggcggttatg atggatatgaa gggttttacc 60
 attggtgaat ttctggttgc gggcctgctc agtataattg tctgatagc ggtcgtatcg 120
 agttacttta catcccgga attaaatgat gtggcaaacg agcgtcttgc cattcaacag 180
 gatttgcgga atgcggcaac attaatgtc cgcgatgcaa gaatggcggg gagcttcggt 240
 tgtttcaata tgtccgagca tactaaagac gatattgttg attcaagtaa tcaaactcaa 300
 tctaaccttg caaaaccggg tgccaaacaa gaaaatcccc ttttttcctt aaaaaggagc 360

ggcacggata aacaactgat tcccgttgct gaatccatag atattaaata tccgggtttt 420
 atccagcgcc ttaacgcatt ggttttccaa tacggtatcg atgaccttga tgcgagtgct 480
 gagactgttg tagtcagcag ctgttccaaa atagcaaaac cgggtaagaa aatatctacc 540
 ttgcaagaag caaagagtgc attacagatt actaatgatg ataaacaaaa tggaaatatc 600
 acccgctcaga aacatgtggt caatgcctat gcggtcggca ggtttggcaa taatgaggaa 660
 agtttgttcc gcttccaatt ggatgataag ggcaagtggg gtaatcctca gttgctcgtg 720
 aaaaagggtta aacgtatgga tgtgcggtat atttatgttt ccggttggtc tgaagatgaa 780
 gatgccggca aagaggaaaa attcagatat acgaataaat tgcacaaatc caaaaatgct 840
 gttacgcctg ccgggggtgga ggttttattg gatagcggcc ttaatgcaa gattgccgct 900
 tcttcagaca atagtattta tgcttaccgt atcaatgcga caatacgcgg gggaaatgta 960
 tgcgcaaaaca gaacactttg a 981

<210> 948

<211> 326

<212> PRT

<213> Neisseria gonorrhoeae

<400> 948

Met Lys Arg Lys Met Leu Asn Val Pro Lys Gly Gly Tyr Asp Gly Met
 1 5 10 15

Lys Gly Phe Thr Ile Val Glu Phe Leu Val Ala Gly Leu Leu Ser Ile
 20 25 30

Ile Val Leu Ile Ala Val Val Ser Ser Tyr Phe Thr Ser Arg Lys Leu
 35 40 45

Asn Asp Val Ala Asn Glu Arg Leu Ala Ile Gln Gln Asp Leu Arg Asn
 50 55 60

Ala Ala Thr Leu Ile Val Arg Asp Ala Arg Met Ala Gly Ser Phe Gly
 65 70 75 80

Cys Phe Asn Met Ser Glu His Thr Lys Asp Asp Ile Val Asp Ser Ser
 85 90 95

Asn Gln Thr Gln Ser Asn Leu Ala Lys Pro Gly Ala Lys Gln Glu Asn
 100 105 110

Pro Leu Phe Ser Leu Lys Arg Ser Gly Met Asp Lys Gln Leu Ile Pro
 115 120 125

Val Ala Glu Ser Ile Asp Ile Lys Tyr Pro Gly Phe Ile Gln Arg Leu
 130 135 140

Asn Ala Leu Val Phe Gln Tyr Gly Ile Asp Asp Leu Asp Ala Ser Ala
 145 150 155 160

Glu Thr Val Val Val Ser Ser Cys Ser Lys Ile Ala Lys Pro Gly Lys
 165 170 175

Lys Ile Ser Thr Leu Gln Glu Ala Lys Ser Ala Leu Gln Ile Thr Asn
 180 185 190

Asp Asp Lys Gln Asn Gly Asn Ile Thr Arg Gln Lys His Val Val Asn

195	200	205
Ala Tyr Ala Val Gly Arg Phe Gly Asn Asn Glu Glu Ser Leu Phe Arg		
210	215	220
Phe Gln Leu Asp Asp Lys Gly Lys Trp Gly Asn Pro Gln Leu Leu Val		
225	230	235
Lys Lys Val Lys Arg Met Asp Val Arg Tyr Ile Tyr Val Ser Gly Cys		
	245	250
Pro Glu Asp Glu Asp Ala Gly Lys Glu Glu Lys Phe Arg Tyr Thr Asn		
	260	270
Lys Phe Asp Lys Ser Lys Asn Ala Val Thr Pro Ala Gly Val Glu Val		
275	280	285
Leu Leu Asp Ser Gly Leu Asn Ala Lys Ile Ala Ala Ser Ser Asp Asn		
290	295	300
Ser Ile Tyr Ala Tyr Arg Ile Asn Ala Thr Ile Arg Gly Gly Asn Val		
305	310	315
		320
Cys Ala Asn Arg Thr Leu		
	325	

<210> 949
 <211> 676
 <212> DNA
 <213> Neisseria meningitidis

<400> 949
 atsagacgta aaatgctaaa cgtwsyaraa ggcagttatg atgggtatgaa aggtttttacc 60
 attattgaat ttttggttgc gggcctgctc agtatgattg tctgatggc ggtcggatcg 120
 agttacttca catcccggaa attaaatgat gcggcaaacg agcgtcttgc cgcgcaacag 180
 gatttgcgga atgcggcaac attgattgtc cgcgatgcca gaatggcagg cggcttcggt 240
 tgtttcaata tgtccgagca tcttgaact gatgttattc ccgatacgac gcaacaaaaat 300
 tctccttttt ccttaaaaaag gaacggtata gataaactta ttcccatagc ggaatcttca 360
 aatatcaatt atcagaattt tttccagggt gtagcgcat tgatttttca atacggaatc 420
 gatgatgtta atgcaagcac cgcgactacc gtcgtcagca gctgtgccgc aatatcgaaa 480
 ccgggcaagc aaatccctac tttagaagat gcaaaaaaag aattgaagat tccggatcag 540
 gataaggagc aaaatggcaa tatagcgcgt caaaggcatg tggatcaatgc ctatgcggtc 600
 ggcaggattg ccgatgagga aagtttggtc cgcttccaat tggatgataa gggcaagtgg 660
 ggtaatcctc agttgc 676

<210> 950
 <211> 225
 <212> PRT
 <213> Neisseria meningitidis

<400> 950
 Xaa Arg Arg Lys Met Leu Asn Val Xaa Xaa Gly Ser Tyr Asp Gly Met
 1 5 10 15
 Lys Gly Phe Thr Ile Ile Glu Phe Leu Val Ala Gly Leu Leu Ser Met

	20		25		30
Ile Val Leu Met Ala Val Gly Ser Ser Tyr Phe Thr Ser Arg Lys Leu					
	35		40		45
Asn Asp Ala Ala Asn Glu Arg Leu Ala Ala Gln Gln Asp Leu Arg Asn					
	50		55		60
Ala Ala Thr Leu Ile Val Arg Asp Ala Arg Met Ala Gly Gly Phe Gly					
	65		70		75
Cys Phe Asn Met Ser Glu His Pro Ala Thr Asp Val Ile Pro Asp Thr					
		85		90	95
Thr Gln Gln Asn Ser Pro Phe Ser Leu Lys Arg Asn Gly Ile Asp Lys					
		100		105	110
Leu Ile Pro Ile Ala Glu Ser Ser Asn Ile Asn Tyr Gln Asn Phe Phe					
		115		120	125
Gln Val Gly Ser Ala Leu Ile Phe Gln Tyr Gly Ile Asp Asp Val Asn					
		130		135	140
Ala Ser Thr Ala Thr Thr Val Val Ser Ser Cys Ala Ala Ile Ser Lys					
		145		150	155
Pro Gly Lys Gln Ile Pro Thr Leu Glu Asp Ala Lys Lys Glu Leu Lys					
		165		170	175
Ile Pro Asp Gln Asp Lys Glu Gln Asn Gly Asn Ile Ala Arg Gln Arg					
		180		185	190
His Val Val Asn Ala Tyr Ala Val Gly Arg Ile Ala Asp Glu Glu Ser					
		195		200	205
Leu Phe Arg Phe Gln Leu Asp Asp Lys Gly Lys Trp Gly Asn Pro Gln					
		210		215	220
Leu					
225					

<210> 951

<211> 999

<212> DNA

<213> Neisseria meningitidis

<400> 951

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atgagacgta aaatgctaaa cgtaccacaaa ggcaattatg atggtatgaa gggttttacc 60
attattgaat ttttggttgc gggcatgctc agtatgattg tcctgatggc ggtcggatcg 120
agttacttca catcccgga attaaatgat gcggcaaacg agcgtctttc cgcgcaacag 180
gatttgcgga atgcggcaac attgattgtc cgcatgcaa gaatggcagg gggcttcggt 240
tgtttcaata tgtccgagca tactaaaaat gatattattg ttgatccaag taagcaaaact 300
caacatgtcc ctgtaaaacc cgtgccaaca caagaaaatc cccttttttc ttagagtggt 360
gctaatacta ataatactaa taataatata gctaaattga ttcctattgc tgaatccaca 420
gatattaaat atccgggttt tgcccaggct cgtccggcat tgattttcca atacggcatc 480
gatgatcttg atgcgagtgc tgagactgtt gtagtcagca gctgttccaa aatagcaaaa 540

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ccgggtaaga aaatatctac cttgcaagaa gcaaagagtg cattacagat tactaatgat 600
gataaacaaa atggaaatat caccggtcaa aggcattgtg tcaatgccta tgcggtcggc 660
aggattgccg gtgaggaagg tttgttccgc ttccaattgg atgataaggg caagtggggg 720
aatcctcagt tgctcgtgaa aaagattaga catatgaaag tgcggtatat ctatgtttcc 780
gactgtcctg aagatgacga tgccggcaaa gaggaataat tcaaataac gggtagattc 840
gacagctcca caaatgctgt tacgcccgcc ggggtggagg ttttattgag tancggtact 900
gataccaaga ttgccgcttc ttcagacaat catatttatg cttaccgtat cgatgcgaca 960
atacgcgggg gaaatgtatg cgcaaacaga acactttga 999

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<210> 952

<211> 332

<212> PRT

<213> Neisseria meningitidis

<400> 952

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Met Arg Arg Lys Met Leu Asn Val Pro Lys Gly Asn Tyr Asp Gly Met
  1             5             10             15

Lys Gly Phe Thr Ile Ile Glu Phe Leu Val Ala Gly Met Leu Ser Met
          20             25             30

Ile Val Leu Met Ala Val Gly Ser Tyr Phe Thr Ser Arg Lys Leu
      35             40             45

Asn Asp Ala Ala Asn Glu Arg Leu Ser Ala Gln Gln Asp Leu Arg Asn
  50             55             60

Ala Ala Thr Leu Ile Val Arg Asp Ala Arg Met Ala Gly Gly Phe Gly
  65             70             75             80

Cys Phe Asn Met Ser Glu His Thr Lys Asn Asp Ile Ile Val Asp Pro
          85             90             95

Ser Lys Gln Thr Gln His Val Pro Val Lys Pro Gly Ala Lys Gln Glu
      100             105             110

Asn Pro Leu Phe Ser Leu Glu Trp Ala Asn Thr Asn Asn Thr Asn Asn
      115             120             125

Asn Thr Ala Lys Leu Ile Pro Ile Ala Glu Ser Thr Asp Ile Lys Tyr
      130             135             140

Pro Gly Phe Ala Gln Ala Arg Pro Ala Leu Ile Phe Gln Tyr Gly Ile
      145             150             155             160

Asp Asp Leu Asp Ala Ser Ala Glu Thr Val Val Val Ser Ser Cys Ser
          165             170             175

Lys Ile Ala Lys Pro Gly Lys Lys Ile Ser Thr Leu Gln Glu Ala Lys
      180             185             190

Ser Ala Leu Gln Ile Thr Asn Asp Asp Lys Gln Asn Gly Asn Ile Thr
      195             200             205

Arg Gln Arg His Val Val Asn Ala Tyr Ala Val Gly Arg Ile Ala Gly
      210             215             220

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Glu Glu Gly Leu Phe Arg Phe Gln Leu Asp Asp Lys Gly Lys Trp Gly
 225 230 235 240

Asn Pro Gln Leu Leu Val Lys Lys Ile Arg His Met Lys Val Arg Tyr
 245 250 255

Ile Tyr Val Ser Asp Cys Pro Glu Asp Asp Asp Ala Gly Lys Glu Glu
 260 265 270

Lys Phe Lys Tyr Thr Gly Thr Phe Asp Ser Ser Thr Asn Ala Val Thr
 275 280 285

Pro Ala Gly Val Glu Val Leu Leu Ser Xaa Gly Thr Asp Thr Lys Ile
 290 295 300

Ala Ala Ser Ser Asp Asn His Ile Tyr Ala Tyr Arg Ile Asp Ala Thr
 305 310 315 320

Ile Arg Gly Gly Asn Val Cys Ala Asn Arg Thr Leu
 325 330

<210> 953

<211> 666

<212> DNA

<213> Neisseria gonorrhoeae

<400> 953

cccgggtgcc aacaagaaaa tccccttttt tccttaaaaa ggagcggcat ggataaaca 60
 ctgattcccg ttgctgaatc catagatatt aaatatccgg gttttatcca gcgccttaac 120
 gcattggttt tccaatacgg tatcgatgat cttgatgcga gtgctgagac tgttgtagtc 180
 agcagctgtt ccaaaatagc aaaaccgggt aagaaaatat ctaccttgca agaagcaaag 240
 agtgcattac agattactaa tgatgataaa caaaatggaa atatcacccg tcagaaacat 300
 gtgggtcaatg cctatgcggt cggcagggtt ggcaataatg aggaaagttt gttccgcttc 360
 caattggatg ataagggcaa gtggggtaat cctcagttgc tcgtgaaaaa gggttaaact 420
 atggatgtgc ggtatattta tgtttccggt tgtcctgaag atgaagatgc cggcaaagag 480
 gaaaaattca gatatacgaa taaattcgac aaatccaaaa atgctgttac gcctgccggg 540
 gtggagggtt tattggatag cggccttaat gccaaagattg ccgcttcttc agacaatagt 600
 atttatgctt accgtatcaa tgcgacaata cgcgggggaa atgtatgcgc aaacagaaca 660
 ctttga 666

<210> 954

<211> 221

<212> PRT

<213> Neisseria gonorrhoeae

<400> 954

Pro Gly Ala Lys Gln Glu Asn Pro Leu Phe Ser Leu Lys Arg Ser Gly
 1 5 10 15

Met Asp Lys Gln Leu Ile Pro Val Ala Glu Ser Ile Asp Ile Lys Tyr
 20 25 30

Pro Gly Phe Ile Gln Arg Leu Asn Ala Leu Val Phe Gln Tyr Gly Ile
 35 40 45

Asp Asp Leu Asp Ala Ser Ala Glu Thr Val Val Val Ser Ser Cys Ser
 50 55 60
 Lys Ile Ala Lys Pro Gly Lys Lys Ile Ser Thr Leu Gln Glu Ala Lys
 65 70 75 80
 Ser Ala Leu Gln Ile Thr Asn Asp Asp Lys Gln Asn Gly Asn Ile Thr
 85 90 95
 Arg Gln Lys His Val Val Asn Ala Tyr Ala Val Gly Arg Phe Gly Asn
 100 105 110
 Asn Glu Glu Ser Leu Phe Arg Phe Gln Leu Asp Asp Lys Gly Lys Trp
 115 120 125
 Gly Asn Pro Gln Leu Leu Val Lys Lys Val Lys Arg Met Asp Val Arg
 130 135 140
 Tyr Ile Tyr Val Ser Gly Cys Pro Glu Asp Glu Asp Ala Gly Lys Glu
 145 150 155 160
 Glu Lys Phe Arg Tyr Thr Asn Lys Phe Asp Lys Ser Lys Asn Ala Val
 165 170 175
 Thr Pro Ala Gly Val Glu Val Leu Leu Asp Ser Gly Leu Asn Ala Lys
 180 185 190
 Ile Ala Ala Ser Ser Asp Asn Ser Ile Tyr Ala Tyr Arg Ile Asn Ala
 195 200 205
 Thr Ile Arg Gly Gly Asn Val Cys Ala Asn Arg Thr Leu
 210 215 220

<210> 955
 <211> 942
 <212> DNA
 <213> Neisseria meningitidis

<400> 955
 atgagacgta aaatgctaaa cgtaccacaaa ggcagttatg atggtatgaa aggtttttacc 60
 attattgaat ttttggttgc gggcctgctc agtatgattg tcctgatggc ggtcggatcg 120
 agttacttca catcccggaa attaaatgat gcggcaaacg agcgtcttgc cgcgcaacag 180
 gatttgcgga atgcggcaac attgattgtc cgcgatgcga gaatggcagg cggcttcggg 240
 tgtttcaata tgtccgagca tcctgcaact gatgttattc ccgatacgac gcaacaaaat 300
 tctccttttt ccttaaaaag gaacgggtata gataaaactta ttcccatagc ggaatcttca 360
 aatatcaatt atcagaattt tttccagggt ggtagcgc atgatttttca atacggaatc 420
 gatgatgtta atgcaagcac cgcgactacc gtcgtcagca gctgtgccgc aatatcgaaa 480
 ccgggcaagc aaatccctac tttagaagat gcaaaaaaag aattgaagat tccggatcag 540
 gataaggagc aaaatggcaa tatagcgcgt caaaggcatg tggatcaatgc ctatgcggtc 600
 ggcaggattg ccgatgagga aggtttgttc cgcttccaat tggatgataa gggcaagtgg 660
 ggtaatcctc agttgctcgt gaaaaagggt agacatatga aagtgcggta tatctatgtt 720
 tccggtgtgc ctgaagatga cgatgccggc aaagaggaaa cattcaaata tacggataaa 780
 ttcgacagcg cccaaaatgc tgttacgccc gccgggggtg aggtttttatt gagtagcggg 840
 actgatacca agattgccgc ttcttcagac aatcatattt atgcttaccg tatcgatgcg 900
 acaatacgcg ggggaaatgt atgcgcaaac agaacacttt ga 942

<210> 956
<211> 313
<212> PRT
<213> Neisseria meningitidis

<400> 956

Met	Arg	Arg	Lys	Met	Leu	Asn	Val	Pro	Lys	Gly	Ser	Tyr	Asp	Gly	Met
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Lys	Gly	Phe	Thr	Ile	Ile	Glu	Phe	Leu	Val	Ala	Gly	Leu	Leu	Ser	Met
			20					25					30		
Ile	Val	Leu	Met	Ala	Val	Gly	Ser	Ser	Tyr	Phe	Thr	Ser	Arg	Lys	Leu
		35					40					45			
Asn	Asp	Ala	Ala	Asn	Glu	Arg	Leu	Ala	Ala	Gln	Gln	Asp	Leu	Arg	Asn
	50					55					60				
Ala	Ala	Thr	Leu	Ile	Val	Arg	Asp	Ala	Arg	Met	Ala	Gly	Gly	Phe	Gly
65					70				75						80
Cys	Phe	Asn	Met	Ser	Glu	His	Pro	Ala	Thr	Asp	Val	Ile	Pro	Asp	Thr
				85					90					95	
Thr	Gln	Gln	Asn	Ser	Pro	Phe	Ser	Leu	Lys	Arg	Asn	Gly	Ile	Asp	Lys
			100					105					110		
Leu	Ile	Pro	Ile	Ala	Glu	Ser	Ser	Asn	Ile	Asn	Tyr	Gln	Asn	Phe	Phe
		115					120					125			
Gln	Val	Gly	Ser	Ala	Leu	Ile	Phe	Gln	Tyr	Gly	Ile	Asp	Asp	Val	Asn
	130					135					140				
Ala	Ser	Thr	Ala	Thr	Thr	Val	Val	Ser	Ser	Cys	Ala	Ala	Ile	Ser	Lys
145					150					155					160
Pro	Gly	Lys	Gln	Ile	Pro	Thr	Leu	Glu	Asp	Ala	Lys	Lys	Glu	Leu	Lys
				165					170					175	
Ile	Pro	Asp	Gln	Asp	Lys	Glu	Gln	Asn	Gly	Asn	Ile	Ala	Arg	Gln	Arg
			180					185					190		
His	Val	Val	Asn	Ala	Tyr	Ala	Val	Gly	Arg	Ile	Ala	Asp	Glu	Glu	Gly
		195					200					205			
Leu	Phe	Arg	Phe	Gln	Leu	Asp	Asp	Lys	Gly	Lys	Trp	Gly	Asn	Pro	Gln
	210					215					220				
Leu	Leu	Val	Lys	Lys	Val	Arg	His	Met	Lys	Val	Arg	Tyr	Ile	Tyr	Val
225					230					235					240
Ser	Gly	Cys	Pro	Glu	Asp	Asp	Asp	Ala	Gly	Lys	Glu	Glu	Thr	Phe	Lys
				245					250					255	
Tyr	Thr	Asp	Lys	Phe	Asp	Ser	Ala	Gln	Asn	Ala	Val	Thr	Pro	Ala	Gly

260							265					270				
Val	Glu	Val	Leu	Leu	Ser	Ser	Gly	Thr	Asp	Thr	Lys	Ile	Ala	Ala	Ser	
		275				280						285				
Ser	Asp	Asn	His	Ile	Tyr	Ala	Tyr	Arg	Ile	Asp	Ala	Thr	Ile	Arg	Gly	
290						295						300				
Gly	Asn	Val	Cys	Ala	Asn	Arg	Thr	Leu								
305				310												

Gly Asn Pro Gln Leu Leu Val Lys Lys Ile Arg His Met Lys Val Arg
115 120 125

Tyr Ile Tyr Val Ser Asp Cys Pro Glu Asp Asp Asp Ala Gly Lys Glu
130 135 140

Glu Lys Phe Lys Tyr Thr Gly Thr Phe Asp Ser Ser Thr Asn Ala Val
145 150 155 160

Thr Pro Ala Gly Val Glu Val Leu Leu Ser Ser Gly Thr Asp Thr Lys
165 170 175

Ile Ala Ala Ser Ser Asp Asn His Ile Tyr Ala Tyr Arg Ile Asp Ala
180 185 190

Thr Ile Arg Gly Gly Asn Val Cys Ala Asn Arg Thr Leu
195 200 205

<210> 959

<211> 612

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 959

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ctgtttatcg tgctgatggt gatgatagtc gtggcctttt tggttgtaac tgccgcccag 120
tcctacaata ccgaacagag gatcagtgcc aacgaatcag acaggaaatt ggctttgtct 180
ttagccgagg cggttttgcg ggaggggcgaa tticagggtt tggatttgga atatgctgcg 240
gacagtaagg ttacgtttag cgaaaactgt gaaaaaggtc tgtgtaccgc agtgaatgtg 300
cggacaaata ataatggtag tgaagaggct tttggcaata tcgtggtgca aggcaagccc 360
gccgttgagg cggtgaaacg ttcttgccct gcaaagtctg gcaaaaattc taccgacctg 420
tgcattgaca ataaagggat ggaatataat aaaggcgcg caggcgtcag caaatgccg 480
cgctatatta tcgaatattt aggcgtgaag aacggacaaa atgtttatcg ggttactgcc 540
aaggcttggg gtaagaatgc caataccgtg gtcgtccttc aatcttatgt aggcaataat 600
gatgagcaat aa 612

<210> 960

<211> 203

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 960

Met Arg Lys Gln Asn Thr Leu Thr Gly Ile Pro Thr Ser Asp Gly Gln
1 5 10 15

Arg Gly Ser Ala Leu Phe Ile Val Leu Met Val Met Ile Val Val Ala
20 25 30

Phe Leu Val Val Thr Ala Ala Gln Ser Tyr Asn Thr Glu Gln Arg Ile
35 40 45

Ser Ala Asn Glu Ser Asp Arg Lys Leu Ala Leu Ser Leu Ala Glu Ala
50 55 60

Ala Leu Arg Glu Gly Glu Phe Gln Val Leu Asp Leu Glu Tyr Ala Ala
65 70 75 80

Asp Ser Lys Val Thr Phe Ser Glu Asn Cys Glu Lys Gly Leu Cys Thr
85 90 95

Ala Val Asn Val Arg Thr Asn Asn Asn Gly Ser Glu Glu Ala Phe Gly
100 105 110

Asn Ile Val Val Gln Gly Lys Pro Ala Val Glu Ala Val Lys Arg Ser
115 120 125

Cys Pro Ala Lys Ser Gly Lys Asn Ser Thr Asp Leu Cys Ile Asp Asn
130 135 140

Lys Gly Met Glu Tyr Asn Lys Gly Ala Ala Gly Val Ser Lys Met Pro
145 150 155 160

Arg Tyr Ile Ile Glu Tyr Leu Gly Val Lys Asn Gly Gln Asn Val Tyr
165 170 175

Arg Val Thr Ala Lys Ala Trp Gly Lys Asn Ala Asn Thr Val Val Val
180 185 190

Leu Gln Ser Tyr Val Gly Asn Asn Asp Glu Gln
195 200

<210> 961
<211> 541
<212> DNA
<213> Neisseria meningitidis

<400> 961
gggtttgcac tgttaatcgt gctgatggtg atratcgtcg tggcttywtg gwtgtaactg 60
ccgcgcagtc ttacaatacc gagcagcgka tcagtkccaa cgaatcagac aggaaattgg 120
ctwtgtcttt ggccgagkcg kctwtgcggg aaggcgaact tcaggttttg gatttggaat 180
atgatacggg cagtaagggtt acatttagcg aaaactgtgg aaaagggtctg tstgccgcag 240
tgaatgtgcg gacaaataat gataatgaag aggccttttga caatatcgtg gtgcaaggca 300
agcccaccgt tgaggcggtg aagcggttctt gccctgcaaa ttctaccgac ctgtgcattg 360
acaagaaagg gwtggaatat aagaaaggca cgagaagcgt cacaaaatgc cacgttatat 420
tatcgaatat ttgggcgtgw agaacggaga aaatgtttat cgggttactg ccaaggcttg 480
gggtaagaat gccaataccg tggctgctct tcaatcttat gtaagcaata atgatgagta 540
a 541

<210> 962
<211> 180
<212> PRT
<213> Neisseria meningitidis

<400> 962
Gly Phe Ala Leu Leu Ile Val Leu Met Val Xaa Ile Val Val Ala Phe
1 5 10 15

Xaa Xaa Val Thr Ala Ala Gln Ser Tyr Asn Thr Glu Gln Arg Ile Ser
20 25 30

Xaa Asn Glu Ser Asp Arg Lys Leu Ala Xaa Ser Leu Ala Glu Xaa Xaa
 35 40 45
 Xaa Arg Glu Gly Glu Leu Gln Val Leu Asp Leu Glu Tyr Asp Thr Asp
 50 55 60
 Ser Lys Val Thr Phe Ser Glu Asn Cys Gly Lys Gly Leu Xaa Ala Ala
 65 70 75 80
 Val Asn Val Arg Thr Asn Asn Asp Asn Glu Glu Ala Phe Asp Asn Ile
 85 90 95
 Val Val Gln Gly Lys Pro Thr Val Glu Ala Val Lys Arg Ser Cys Pro
 100 105 110
 Ala Asn Ser Thr Asp Leu Cys Ile Asp Lys Lys Gly Xaa Glu Tyr Lys
 115 120 125
 Lys Gly Thr Arg Ser Val Thr Lys Met Pro Arg Tyr Ile Ile Glu Tyr
 130 135 140
 Leu Gly Val Xaa Asn Gly Glu Asn Val Tyr Arg Val Thr Ala Lys Ala
 145 150 155 160
 Trp Gly Lys Asn Ala Asn Thr Val Val Val Leu Gln Ser Tyr Val Ser
 165 170 175
 Asn Asn Asp Glu
 180

<210> 963
 <211> 594
 <212> DNA
 <213> Neisseria meningitidis

<400> 963
 atgcgcaaac agaacacttt gacgggaatc ccgacttctg acggacagag ggggtttgca 60
 ctgtttatcg tgetgatggg gatgatcgtc gtggcttttt tggttgtaac tgccgcgcag 120
 tcttacaata ccgagcagcg gatcagtgcc aacgaatcag acaggaaatt ggctttgtct 180
 ttggccgagg cggcttttgcg ggaaggcgaa cttcagggtt tggatttga atatgatacg 240
 gacagtaagg ttacatttag cgaaaactgt ggaaaaggtc tgtgtaccgc agtgaatgtg 300
 cggacaaata atgataatga agaggctttt gacaatatcg tgggtgcaagg caagcccacc 360
 gttgaggcgg tgaagcggtc ttgcactgca aaatctacag gcctgtgcat tgacaataaa 420
 gggatggaat ataagaaagg cagcgaagc gtcagcaaaa tgccacgtta tattatcgaa 480
 tatttgggcg tgaagaacgg agaaaatgtt tatcggggta ctgccaaaggc ttggggtaag 540
 aatgccaata ccgtggtcgt ccttcaatct tatgtaagca ataatgatga gtaa 594

<210> 964
 <211> 197
 <212> PRT
 <213> Neisseria meningitidis

<400> 964
 Met Arg Lys Gln Asn Thr Leu Thr Gly Ile Pro Thr Ser Asp Gly Gln

1 5 10 15
 Arg Gly Phe Ala Leu Phe Ile Val Leu Met Val Met Ile Val Val Ala
 20 25 30
 Phe Leu Val Val Thr Ala Ala Gln Ser Tyr Asn Thr Glu Gln Arg Ile
 35 40 45
 Ser Ala Asn Glu Ser Asp Arg Lys Leu Ala Leu Ser Leu Ala Glu Ala
 50 55 60
 Ala Leu Arg Glu Gly Glu Leu Gln Val Leu Asp Leu Glu Tyr Asp Thr
 65 70 75 80
 Asp Ser Lys Val Thr Phe Ser Glu Asn Cys Gly Lys Gly Leu Cys Thr
 85 90 95
 Ala Val Asn Val Arg Thr Asn Asn Asp Asn Glu Glu Ala Phe Asp Asn
 100 105 110
 Ile Val Val Gln Gly Lys Pro Thr Val Glu Ala Val Lys Arg Ser Cys
 115 120 125
 Thr Ala Lys Ser Thr Gly Leu Cys Ile Asp Asn Lys Gly Met Glu Tyr
 130 135 140
 Lys Lys Gly Thr Gln Ser Val Ser Lys Met Pro Arg Tyr Ile Ile Glu
 145 150 155 160
 Tyr Leu Gly Val Lys Asn Gly Glu Asn Val Tyr Arg Val Thr Ala Lys
 165 170 175
 Ala Trp Gly Lys Asn Ala Asn Thr Val Val Val Leu Gln Ser Tyr Val
 180 185 190
 Ser Asn Asn Asp Glu
 195

<210> 965
 <211> 594
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 965
 atgcgcaaac agaacacttt gacgggaatc ccgacttctg acggacagag ggggtttgca 60
 ctgtttatcg tgctgatggt gatgatcgtc gtggcttttt tggttgtaac tgccgcgcag 120
 tcttacaata ccgagcagcg gatcagtgcc aacgaatcag acaggaaatt ggctttgtct 180
 ttggccgagg cggttttgcg ggaaggcgaa cttcagggtt tggatttga atatgatacg 240
 gacagtaagg ttacatttag cgaaaactgt ggaaaaggtc tgtgtgccgc agtgaatgtg 300
 cggacaaata atgataatga agaggctttt gacaatatcg tggtgcaagg caagcccacc 360
 gttgaggcgg tgaagcggtt ttgccctgca aattctaccg acctgtgcat tgacaagaaa 420
 gggatggaat ataagaaagg cacgagaagc gtcagcaaaa tgccacgtta tattatcgaa 480
 tatttgggcg tgaagaacgg agaaaatgtt tatcgggtta ctgccaaggc ttggggtaag 540
 aatgccaata ccgtggtcgt ctttcaatct tatgtaagca ataagatga gtaa 594

<210> 966
 <211> 197
 <212> PRT
 <213> Neisseria meningitidis

<400> 966
 Met Arg Lys Gln Asn Thr Leu Thr Gly Ile Pro Thr Ser Asp Gly Gln
 1 5 10 15
 Arg Gly Phe Ala Leu Phe Ile Val Leu Met Val Met Ile Val Val Ala
 20 25 30
 Phe Leu Val Val Thr Ala Ala Gln Ser Tyr Asn Thr Glu Gln Arg Ile
 35 40 45
 Ser Ala Asn Glu Ser Asp Arg Lys Leu Ala Leu Ser Leu Ala Glu Ala
 50 55 60
 Ala Leu Arg Glu Gly Glu Leu Gln Val Leu Asp Leu Glu Tyr Asp Thr
 65 70 75 80
 Asp Ser Lys Val Thr Phe Ser Glu Asn Cys Gly Lys Gly Leu Cys Ala
 85 90 95
 Ala Val Asn Val Arg Thr Asn Asn Asp Asn Glu Glu Ala Phe Asp Asn
 100 105 110
 Ile Val Val Gln Gly Lys Pro Thr Val Glu Ala Val Lys Arg Ser Cys
 115 120 125
 Pro Ala Asn Ser Thr Asp Leu Cys Ile Asp Lys Lys Gly Met Glu Tyr
 130 135 140
 Lys Lys Gly Thr Arg Ser Val Ser Lys Met Pro Arg Tyr Ile Ile Glu
 145 150 155 160
 Tyr Leu Gly Val Lys Asn Gly Glu Asn Val Tyr Arg Val Thr Ala Lys
 165 170 175
 Ala Trp Gly Lys Asn Ala Asn Thr Val Val Val Leu Gln Ser Tyr Val
 180 185 190
 Ser Asn Asn Asp Glu
 195

<210> 967
 <211> 612
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 967
 atgaagaata atgattgctt ggcctgaaa aatccccagt ccggtatggc gttgatagaa 60
 gtcttggtcg ctatgctcgt tctgaccatc ggtatttttg cattgctgtc cgtacagttg 120
 cggacagtcg cttccgtcag ggaggcggaa acgcaaacca tcgtcagcca aatcacgcaa 180
 aacctgatgg aaggaatgtt gatgaatccg accattgatt tggacagcaa caagaaaaac 240
 tatagtcttt acatgggaaa acagacacta tcagctgtgg atggtgagtt tatgcttgat 300

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gccgagaaaa gtaaggcgca gttggcagag gaacaattga agagatttag tcatgagctg 360
aaaaatgcct tgccggatgc ggtagctatt cattacgccg tctgcaagga ttcgtcgggt 420
gacgcgccga cattgtccga cagcgggtgt ttttcttcaa attgcgacaa taaggcaaac 480
ggggatactt tgattaaagt attgtgggta aatgattcgg caggggattc ggatatttcc 540
cgtacgaatc ttgaagtgag cggcgacaat atcgtatata cctatcaggc aagggtcggg 600
ggtcgtgaat ga                                     612

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<210> 968
 <211> 203
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 968

Met	Lys	Asn	Asn	Asp	Cys	Leu	Arg	Leu	Lys	Asn	Pro	Gln	Ser	Gly	Met
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Ala	Leu	Ile	Glu	Val	Leu	Val	Ala	Met	Leu	Val	Leu	Thr	Ile	Gly	Ile
			20					25						30	
Leu	Ala	Leu	Leu	Ser	Val	Gln	Leu	Arg	Thr	Val	Ala	Ser	Val	Arg	Glu
		35					40					45			
Ala	Glu	Thr	Gln	Thr	Ile	Val	Ser	Gln	Ile	Thr	Gln	Asn	Leu	Met	Glu
	50					55					60				
Gly	Met	Leu	Met	Asn	Pro	Thr	Ile	Asp	Leu	Asp	Ser	Asn	Lys	Lys	Asn
65					70					75					80
Tyr	Ser	Leu	Tyr	Met	Gly	Lys	Gln	Thr	Leu	Ser	Ala	Val	Asp	Gly	Glu
				85					90					95	
Phe	Met	Leu	Asp	Ala	Glu	Lys	Ser	Lys	Ala	Gln	Leu	Ala	Glu	Glu	Gln
			100					105					110		
Leu	Lys	Arg	Phe	Ser	His	Glu	Leu	Lys	Asn	Ala	Leu	Pro	Asp	Ala	Val
		115					120					125			
Ala	Ile	His	Tyr	Ala	Val	Cys	Lys	Asp	Ser	Ser	Gly	Asp	Ala	Pro	Thr
	130					135					140				
Leu	Ser	Asp	Ser	Gly	Ala	Phe	Ser	Ser	Asn	Cys	Asp	Asn	Lys	Ala	Asn
145					150					155					160
Gly	Asp	Thr	Leu	Ile	Lys	Val	Leu	Trp	Val	Asn	Asp	Ser	Ala	Gly	Asp
			165					170						175	
Ser	Asp	Ile	Ser	Arg	Thr	Asn	Leu	Glu	Val	Ser	Gly	Asp	Asn	Ile	Val
		180					185						190		
Tyr	Thr	Tyr	Gln	Ala	Arg	Val	Gly	Gly	Arg	Glu					
		195					200								

<210> 969
 <211> 609
 <212> DNA

<213> Neisseria meningitidis

<400> 969

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atgaagaata atgattgctt ccgcctgaaa gattcccagt ccggtatggc gctgatagaa 60
gtcttggttg ctatgctcgt tctgaccatc ggtatttttg cactattgtc tgtacagttg 120
cggacagtcn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 180
nnnttgatgg agggaatggt gatgaatccg accattgatt cggacagcaa caagaaaaac 240
tataatcttt acatgggaaa ccatacacta tcagctgtgg atggcgattt tgcgattgat 300
gccatgaaaa ctaaggggca attggcagag gcacaattga agagatttag ttatgagctg 360
aaaaatgcct tgccggatgc ggcagccatc cattacgccg tctgcaagga ttcgtcgggt 420
aacgcgccga cattgtccgg caatgctttt tcttcaaatt ggcacaataa ggcaaacggg 480
gatacttttaa ttaaagtatt gtgggtaaaat gattcggcag gggattcgga tatttcccgt 540
acgaatcttg aggtgagcgg cgacaatatc gtatatactt atcaggcaag ggtcggagggt 600
cggaatga 609
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<210> 970

<211> 202

<212> PRT

<213> Neisseria meningitidis

<400> 970

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Met Lys Asn Asn Asp Cys Phe Arg Leu Lys Asp Ser Gln Ser Gly Met
  1             5             10             15

Ala Leu Ile Glu Val Leu Val Ala Met Leu Val Leu Thr Ile Gly Ile
      20             25             30

Leu Ala Leu Leu Ser Val Gln Leu Arg Thr Val Xaa Xaa Xaa Xaa Xaa
      35             40             45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Met Glu
      50             55             60

Gly Met Leu Met Asn Pro Thr Ile Asp Ser Asp Ser Asn Lys Lys Asn
      65             70             75             80

Tyr Asn Leu Tyr Met Gly Asn His Thr Leu Ser Ala Val Asp Gly Asp
      85             90             95

Phe Ala Ile Asp Ala Met Lys Thr Lys Gly Gln Leu Ala Glu Ala Gln
      100            105            110

Leu Lys Arg Phe Ser Tyr Glu Leu Lys Asn Ala Leu Pro Asp Ala Ala
      115            120            125

Ala Ile His Tyr Ala Val Cys Lys Asp Ser Ser Gly Asn Ala Pro Thr
      130            135            140

Leu Ser Gly Asn Ala Phe Ser Ser Asn Cys Asp Asn Lys Ala Asn Gly
      145            150            155            160

Asp Thr Leu Ile Lys Val Leu Trp Val Asn Asp Ser Ala Gly Asp Ser
      165            170            175

Asp Ile Ser Arg Thr Asn Leu Glu Val Ser Gly Asp Asn Ile Val Tyr
      180            185            190
```


Thr Tyr Gln Ala Arg Val Gly Gly Arg Glu
195 200

<210> 971
<211> 615
<212> DNA
<213> Neisseria meningitidis

<400> 971
atgaagaata atgattgctt ccgcctgaaa aacccccagt ccggtatggc gctgatagaa 60
gtcttggtcg ctatgctcgt tctgaccatc ggtatcttgg cactattgtc tggtcagttg 120
cggacagtcg cttccgtcag ggaggcagag acgcaaacca tcgtcagtca aatcacgcaa 180
aacctgatgg aaggaatggt gatgaatccg accattgatt cggacagcaa caagaaaaac 240
tataatcttt acatgggaaa ccatcatgca ctatcagttg tggatggcga ttttcagggt 300
gatgccataa aaactaagac gcagttggca gaggcacaat tgaagagatt tagttatgag 360
ctgaaaaatg ccttgccgga tgcggcagcc atccattacg ccgtctgcaa ggattcgtcg 420
ggtgttgccg cgacattgtc cgccggcagt actttttctt caaattgcga tggtagtgca 480
aatggggata ctttgattaa agtattgtgg gtaaattgatt cggcagggga ttcggatatc 540
gcccgtagca atcttgagac gaacggcaac aatatcgtat atacctatca ggcaagggtc 600
ggaggtcggg aatga 615

<210> 972
<211> 204
<212> PRT
<213> Neisseria meningitidis

<400> 972
Met Lys Asn Asn Asp Cys Phe Arg Leu Lys Asn Pro Gln Ser Gly Met.
1 5 10 15
Ala Leu Ile Glu Val Leu Val Ala Met Leu Val Leu Thr Ile Gly Ile
20 25 30
Leu Ala Leu Leu Ser Val Gln Leu Arg Thr Val Ala Ser Val Arg Glu
35 40 45
Ala Glu Thr Gln Thr Ile Val Ser Gln Ile Thr Gln Asn Leu Met Glu
50 55 60
Gly Met Leu Met Asn Pro Thr Ile Asp Ser Asp Ser Asn Lys Lys Asn
65 70 75 80
Tyr Asn Leu Tyr Met Gly Asn His His Ala Leu Ser Val Val Asp Gly
85 90 95
Asp Phe Gln Val Asp Ala Ile Lys Thr Lys Thr Gln Leu Ala Glu Ala
100 105 110
Gln Leu Lys Arg Phe Ser Tyr Glu Leu Lys Asn Ala Leu Pro Asp Ala
115 120 125
Ala Ala Ile His Tyr Ala Val Cys Lys Asp Ser Ser Gly Val Ala Pro
130 135 140

Thr Leu Ser Ala Gly Ser Thr Phe Ser Ser Asn Cys Asp Gly Ser Ala
145 150 155 160

Asn Gly Asp Thr Leu Ile Lys Val Leu Trp Val Asn Asp Ser Ala Gly
165 170 175

Asp Ser Asp Ile Ala Arg Thr Asn Leu Glu Thr Asn Gly Asn Asn Ile
180 185 190

Val Tyr Thr Tyr Gln Ala Arg Val Gly Gly Arg Glu
195 200

<210> 973

<211> 609

<212> DNA

<213> Neisseria meningitidis

<400> 973

atgaagaata atgattgctt ccgcctgaaa gattcccagt ccggtatggc gctgatagaa 60
gtcttggttg ctatgctcgt tctgaccatc ggtatttttg cactattgtc tgtacagttg 120
cggacagtcg cttccgtcag ggaggcggag acacaaacca tcgtcagcca aatcacgcaa 180
aacctgatgg agggaatggt gatgaatccg accattgatt cggacagcaa caagaaaaac 240
tataatcttt acatgggaaa ccatacacta tcagctgtgg atggcgattt tgcgattgat 300
gccatgaaaa ctaaggggca attggcagag gcacaattga agagatttag ttatgagctg 360
aaaaatgcct tgccggatgc ggcagccatc cattacgccg tctgcaagga ttcgtcgggt 420
aacgcgccga cattgtccgg caatgctttt tcttcaaatt gcgacaataa ggcaaacggg 480
gatactttaa ttaaagtatt gtgggtaaat gattcggcag gggattcggg tatttcccgt 540
acgaatcttg aggtgagcgg cgacaatatc gtatatactt atcaggcaag ggtcggagggt 600
cgggaatga 609

<210> 974

<211> 202

<212> PRT

<213> Neisseria meningitidis

<400> 974

Met Lys Asn Asn Asp Cys Phe Arg Leu Lys Asp Ser Gln Ser Gly Met
1 5 10 15

Ala Leu Ile Glu Val Leu Val Ala Met Leu Val Leu Thr Ile Gly Ile
20 25 30

Leu Ala Leu Leu Ser Val Gln Leu Arg Thr Val Ala Ser Val Arg Glu
35 40 45

Ala Glu Thr Gln Thr Ile Val Ser Gln Ile Thr Gln Asn Leu Met Glu
50 55 60

Gly Met Leu Met Asn Pro Thr Ile Asp Ser Asp Ser Asn Lys Lys Asn
65 70 75 80

Tyr Asn Leu Tyr Met Gly Asn His Thr Leu Ser Ala Val Asp Gly Asp
85 90 95

Phe Ala Ile Asp Ala Met Lys Thr Lys Gly Gln Leu Ala Glu Ala Gln

100	105	110
Leu Lys Arg Phe Ser Tyr Glu	Leu Lys Asn Ala Leu Pro Asp Ala Ala	
115	120	125
Ala Ile His Tyr Ala Val Cys	Lys Asp Ser Ser Gly Asn Ala Pro Thr	
130	135	140
Leu Ser Gly Asn Ala Phe Ser Ser Asn Cys Asp Asn Lys Ala Asn Gly		
145	150	155
Asp Thr Leu Ile Lys Val Leu Trp Val Asn Asp Ser Ala Gly Asp Ser		
165	170	175
Asp Ile Ser Arg Thr Asn Leu Glu Val Ser Gly Asp Asn Ile Val Tyr		
180	185	190
Thr Tyr Gln Ala Arg Val Gly Gly Arg Glu		
195	200	

<210> 975
 <211> 342
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 975
 atgacgcaca cagcctctcc acgtgatgaa ttcatacgcg gcataaaaga aagttcgccc 60
 atgctgattg ggcttttggc ttgggcattg atactcggtg tgcagggcgg gcaaaaaggt 120
 atgggcccgc tggaaatgct gctgatgacg gggatgaact ttgccggcgg ctccgaattt 180
 gccacgggtca acctgtgggc ggaacctctg ccgatactgc ttatcgccac cataaccttt 240
 atgattaatt cgcggcatat cctgatgggg ggccggcgctt gccacgcaca tgaaagaaat 300
 accgctgaaa aaagccgcgc ccgcgctgtt ttttatgtgt ga 342

<210> 976
 <211> 113
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 976
 Met Thr His Thr Ala Ser Pro Arg Asp Glu Phe Ile Arg Gly Ile Lys
 1 5 10 15
 Glu Ser Ser Pro Met Leu Ile Gly Leu Leu Pro Trp Ala Leu Ile Leu
 20 25 30
 Gly Met Gln Gly Gly Gln Lys Gly Met Gly Arg Leu Glu Met Leu Leu
 35 40 45
 Met Thr Gly Met Asn Phe Ala Gly Gly Ser Glu Phe Ala Thr Val Asn
 50 55 60
 Leu Trp Ala Glu Pro Leu Pro Ile Leu Leu Ile Ala Thr Ile Thr Phe
 65 70 75 80
 Met Ile Asn Ser Arg His Ile Leu Met Gly Gly Gly Ala Cys His Ala

85

90

95

His Glu Arg Asn Thr Ala Glu Lys Ser Arg Ala Arg Ala Val Phe Tyr
 100 105 110

Val

<210> 977

<211> 336

<212> DNA

<213> Neisseria meningitidis

<400> 977

atgcacacct tccccgcata acgaatttat acgcggcatc aaagaaagtt cgcctatgct 60
 gattgggctg ctgccttggg cattaatact cggatatgcag ggcggacaaa aaggcatgag 120
 ctggctggaa atgttggtga tgaccagtat gaacttcgcc ggcggctccg agtttgccac 180
 ggtcaacctg tgggcsaac ctctgccgat actgcttata gccaccgtaa cctttatgat 240
 taattctcgg catatcctga tgggggcggc gcttgccccg cacctgaaag gaataccgct 300
 gaaaaaagcc gtgcccgcac tgttttttat gtgtga 336

<210> 978

<211> 112

<212> PRT

<213> Neisseria meningitidis

<400> 978

Met His Thr Pro Ser Pro His Asn Glu Phe Ile Arg Gly Ile Lys Glu
 1 5 10 15

Ser Ser Pro Met Leu Ile Gly Leu Leu Pro Trp Ala Leu Ile Leu Gly
 20 25 30

Met Gln Gly Gly Gln Lys Gly Met Ser Trp Leu Glu Met Leu Leu Met
 35 40 45

Thr Ser Met Asn Phe Ala Gly Gly Ser Glu Phe Ala Thr Val Asn Leu
 50 55 60

Trp Ala Glu Pro Leu Pro Ile Leu Leu Ile Ala Thr Val Thr Phe Met
 65 70 75 80

Ile Asn Ser Arg His Ile Leu Met Gly Gly Gly Ala Cys Pro Ala Pro
 85 90 95

Glu Arg Asn Thr Ala Glu Lys Ser Arg Ala Arg Thr Val Phe Tyr Val
 100 105 110

<210> 979

<211> 341

<212> DNA

<213> *Neisseria meningitidis*

<400> 979

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atgacacaca taagctcgcc ccgtaacgaa tttatacgcg gcatcaaaga aagttcgccc 60
atgctgacgc ggcttttgcc ttgggcatta atactcggtg tgcaggggtg acaaaaaggc 120
atgagctggc tggaaatggt gttgatgacc ggtatgaact tcgccggcgg ctccgagttt 180
gccacgggtc acctgtgggc ggaacctctg ccgatactgc ttatcgccac cgtaaccttt 240
atgattaatt ctcggcatac cctgatgggg gcggcacttg ccccgcacct gaaagaaata 300
ccgctgaaaa aagccgtgcc cgcactgttt tttatgtgtg a 341
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<210> 980

<211> 113

<212> PRT

<213> *Neisseria meningitidis*

<400> 980

```
Met Thr His Ile Ser Ser Pro Arg Asn Glu Phe Ile Arg Gly Ile Lys
  1              5              10              15
```

```
Glu Ser Ser Pro Met Leu Ile Gly Leu Leu Pro Trp Ala Leu Ile Leu
      20              25              30
```

```
Gly Met Gln Gly Gly Gln Lys Gly Met Ser Trp Leu Glu Met Leu Leu
      35              40              45
```

```
Met Thr Gly Met Asn Phe Ala Gly Gly Ser Glu Phe Ala Thr Val Asn
      50              55              60
```

```
Leu Trp Ala Glu Pro Leu Pro Ile Leu Leu Ile Ala Thr Val Thr Phe
      65              70              75              80
```

```
Met Ile Asn Ser Arg His Ile Leu Met Gly Xaa Gly Thr Cys Pro Ala
      85              90              95
```

```
Pro Glu Arg Asn Thr Ala Glu Lys Ser Arg Ala Arg Thr Val Phe Tyr
      100             105             110
```

Val

<210> 981

<211> 735

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 981

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atgcctgacc caatagggat tcttttcgct gccgtcgggg ttgatttttt tgccgttggt 60
ttgagggggc gttttcaacg aataggcgcg gttggcatgt tgataataat aatcctgatg 120
gcggaggtcg gaacaaaaac ggtcgtaacc gaggttgacg ctgaggttgt ggcggatttt 180
ggcggtatcg aaggattttt tgaatgccgc ctgcaagagc ctgtggcttt ccccgtaaata 240
cacgcggtcg gatttgtagt aggaagacgg cttgtcggca ctcgggcggc aatatttgtc 300
cgaaccgtcg gcggaacagt gcgtctgctg aaaatgattg tccaaaccga tgccctgccg 360
gtcgtaagag aggcgggcat aatccgcca agtgcttcta tcggcatttg tatagacata 420
ttccaaaccg tagcggcttt tgggtgtcgt ctcgtcgtaa aacacgcccg taccgtattc 480
cgcgccacc tccgcaccgt tttcaccgtt ggtaatcagc ccgctgtatt tgcggccgcc 540
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cgcgtatttg ccgtagcctc ttatcgatcc gtatttttta ttttcatcaa aaaccgcctt 600
 ggtcaggaat gccggaaccg tcatatcgcg cgtgtcgaaa gtttgctgcg tgcgttcgag 660
 tatgccgccg atgtagtgcc gtttgttttc aaaacgaaaa cccgggcgga acagccacga 720
 ccggctttcg tatga 735

<210> 982
 <211> 244
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 982
 Met Pro Asp Pro Ile Gly Ile Leu Phe Ala Ala Val Gly Val Asp Phe
 1 5 10 15
 Phe Ala Val Val Leu Arg Gly Arg Phe Gln Arg Ile Gly Ala Val Gly
 20 25 30
 Met Leu Ile Ile Ile Ile Leu Met Ala Glu Val Gly Thr Lys Thr Val
 35 40 45
 Val Thr Glu Val Asp Ala Gln Val Val Ala Asp Phe Gly Gly Ile Glu
 50 55 60
 Gly Phe Phe Glu Cys Arg Leu Gln Glu Pro Val Ala Phe Pro Val Asn
 65 70 75 80
 His Ala Val Gly Phe Val Val Gly Arg Arg Leu Val Gly Thr Arg Ala
 85 90 95
 Ala Ile Phe Val Arg Thr Val Gly Gly Thr Val Arg Leu Leu Lys Met
 100 105 110
 Ile Val Gln Thr Asp Ala Leu Pro Val Val Arg Glu Ala Gly Ile Ile
 115 120 125
 Arg Pro Ser Val Phe Ile Gly Ile Gly Ile Asp Ile Phe Gln Thr Val
 130 135 140
 Ala Ala Phe Gly Val Arg Leu Val Val Lys His Ala Arg Thr Val Phe
 145 150 155 160
 Arg Ala His Leu Arg Thr Val Phe Thr Val Gly Asn Gln Pro Ala Val
 165 170 175
 Phe Ala Ala Ala Arg Val Phe Ala Val Ala Ser Tyr Arg Ser Val Phe
 180 185 190
 Phe Ile Phe Ile Lys Asn Arg Leu Gly Gln Glu Cys Arg Asn Arg His
 195 200 205
 Ile Ala Arg Val Glu Ser Leu Leu Arg Ala Phe Glu Tyr Ala Ala Asp
 210 215 220
 Val Val Pro Phe Val Phe Lys Thr Lys Thr Arg Ala Glu Gln Pro Arg
 225 230 235 240

Pro Ala Phe Val

<210> 983

<211> 915

<212> DNA

<213> Neisseria meningitidis

<400> 983

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atgctgtgctg cggtagtcgt agcgcaagcc cgcgccgaca tccgcccacc tgcccaaacg 60
gacattgtcc cgaactgccg cgtaatagct tttaccgttg atgctgcgcg gcgtgcagtc 120
cgtataagta ttgttgccca agcggcagat ttgccccgta acgacatttc ccctgcctat 180
ggtgacccaa taggggctgg tttcactgcc gttggggctg atttttttgc cgttggtttg 240
agggggcgtg ttcgacgaat aggcgcggtt ggcatgttga taataataat cctgatggcg 300
gagattagag ccaaagcggg caaacccgag attcacgctc aggttgtggc ggattttggc 360
ggtatcgaag gattttttga atgccgcctg caagagcctg tggctttccc cgtaaatcac 420
gcgatcggat ttgtaatagg aaaacggctt gtcggcactc gggcggaat atttgtccga 480
accgtcggca gaacagtgcg tctgctgaaa atgattatcc aaaccgatgc cctgccggtc 540
gtaagagagg cgggcataat ccgcccaagt gtctttatcg gcattggtat agacatatc 600
caaacgtag cggcttttgg tgtgcgtctc gtcgtaaaac acgcccgtag cgtattccgc 660
gccaccagc gcaccgtttt cgccgttggt aaacagtcgc ccgtatttgc ggttgcccgc 720
gtatttgccg ttaccgggca aagaaccgcg ctgtttttta tttgcatcaa aaaccgcctt 780
ggtcaggaat gccggaaccg tcatatcgcg cgtgtcgaaa gtttgttgcg tgtgttcgag 840
tatgccgcg atgtagtgcc gcttattctc aaaacgaaaa cccggggcga acagccacga 900
ccgctttcg tatga 915
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<210> 984

<211> 304

<212> PRT

<213> Neisseria meningitidis

<400> 984

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Met Arg Ala Ala Val Val Val Ala Gln Ala Arg Ala Asp Ile Arg Pro
 1           5           10           15

Pro Ala Gln Thr Asp Ile Val Pro Asn Cys Arg Val Ile Ala Phe Thr
      20           25           30

Val Asp Ala Ala Arg Arg Ala Val Arg Ile Ser Ile Val Ala Gln Ala
 35           40           45

Ala Asp Leu Pro Arg Asn Asp Ile Ser Pro Ala Tyr Gly Asp Pro Ile
 50           55           60

Gly Ala Gly Phe Thr Ala Val Gly Ala Asp Phe Phe Ala Val Val Leu
 65           70           75           80

Arg Gly Arg Val Arg Arg Ile Gly Ala Val Gly Met Leu Ile Ile Ile
      85           90           95

Ile Leu Met Ala Glu Ile Arg Ala Lys Ala Val Lys Pro Glu Ile His
100           105           110

Ala Gln Val Val Ala Asp Phe Gly Gly Ile Glu Gly Phe Phe Glu Cys
115           120           125
```

Arg Leu Gln Glu Pro Val Ala Phe Pro Val Asn His Ala Ile Gly Phe
 130 135 140
 Val Ile Gly Lys Arg Leu Val Gly Thr Arg Ala Ala Ile Phe Val Arg
 145 150 155 160
 Thr Val Gly Arg Thr Val Arg Leu Leu Lys Met Ile Ile Gln Thr Asp
 165 170 175
 Ala Leu Pro Val Val Arg Glu Ala Gly Ile Ile Arg Pro Ser Val Phe
 180 185 190
 Ile Gly Ile Gly Ile Asp Ile Phe Gln Thr Val Ala Ala Phe Gly Val
 195 200 205
 Arg Leu Val Val Lys His Ala Arg Thr Val Phe Arg Ala His Gln Arg
 210 215 220
 Thr Val Phe Ala Val Gly Lys Gln Ser Ala Val Phe Val Val Ala Arg
 225 230 235 240
 Val Phe Ala Val Thr Gly Gln Arg Thr Arg Leu Phe Phe Ile Cys Ile
 245 250 255
 Lys Asn Arg Leu Gly Gln Glu Cys Arg Asn Arg His Ile Ala Arg Val
 260 265 270
 Glu Ser Leu Leu Arg Val Phe Glu Tyr Ala Ala Asp Val Val Pro Leu
 275 280 285
 Ile Leu Lys Thr Lys Thr Arg Ala Glu Gln Pro Arg Pro Ala Phe Val
 290 295 300

<210> 985

<211> 900

<212> DNA

<213> *Neisseria meningitidis*

<400> 985

atgcgtgctg cggtagtcgt agcgcaaccc cgcgccgaca tccgcccacc tgcccaaacg 60
 gacattgtcc cgaactgccg cgtaataagct tttgccgttg atgctgcgcg gcgtgcagtc 120
 cgtataagta ttgttgccca agcggcagat ttgccccgta accacatttc ccctgcctat 180
 gctgacccaa tagggttggt ccttgccgcc gttgggggttg gcggttttag ggggcgtttt 240
 cgacgaatag gcgcggttgg catgttgata ataataatcc tgatggcgga gattagagtc 300
 aaagcggtc aaaccgagat tcacgctcag gttgtggcgg attttggcgg tatcgaagga 360
 ttttttgaat gccgcctgca agagcctgtg gctttccccg taaatcacgc ggtcggattt 420
 gtagtaggaa aacggcctgt cggcactcgg gcggcaatat ttgtccgaac cgtcggcaga 480
 acagtgcgtc tgctgaaaat gattgtccaa accgatgcc tgccggtcgt aagagaggcg 540
 ggcataatcc acccaagtgt ctttatcggc attggtatag acatattcca aaccgtagcg 600
 gcttttgggtg tgcgtctcgt cgtaaaacac gcccgtagcg tattccgcgc ccaccagcgc 660
 accgttttcg ccgttggtaa acagaccgcc gtatttgtgg tcgcccgcgt atttgccgtt 720
 gcctcttatt ggtccgtatt ttctattttc atcaaaaacc gccttggtca ggaatgccgg 780

aaccgtcata tcgcgctgt cgaaagtttg ttgcgtgtgt tcgagtatgc cgccgatgta 840
 gtgccggtttg ttttcaaaac gaaaaccgg gcggaacagc cacgatcggc tttcgtatga 900

<210> 986
 <211> 299
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 986

Met	Arg	Ala	Ala	Val	Val	Val	Ala	Gln	Pro	Arg	Ala	Asp	Ile	Arg	Pro	1	5	10	15
Pro	Ala	Gln	Thr	Asp	Ile	Val	Pro	Asn	Cys	Arg	Val	Ile	Ala	Phe	Ala	20	25	30	
Val	Asp	Ala	Ala	Arg	Arg	Ala	Val	Arg	Ile	Ser	Ile	Val	Ala	Gln	Ala	35	40	45	
Ala	Asp	Leu	Pro	Arg	Asn	His	Ile	Ser	Pro	Ala	Tyr	Ala	Asp	Pro	Ile	50	55	60	
Gly	Leu	Val	Leu	Ala	Ala	Val	Gly	Val	Gly	Gly	Phe	Arg	Gly	Arg	Phe	65	70	75	80
Arg	Arg	Ile	Gly	Ala	Val	Gly	Met	Leu	Ile	Ile	Ile	Ile	Leu	Met	Ala	85	90	95	
Glu	Ile	Arg	Val	Lys	Ala	Val	Lys	Thr	Glu	Ile	His	Ala	Gln	Val	Val	100	105	110	
Ala	Asp	Phe	Gly	Gly	Ile	Glu	Gly	Phe	Phe	Glu	Cys	Arg	Leu	Gln	Glu	115	120	125	
Pro	Val	Ala	Phe	Pro	Val	Asn	His	Ala	Val	Gly	Phe	Val	Val	Gly	Lys	130	135	140	
Arg	Leu	Val	Gly	Thr	Arg	Ala	Ala	Ile	Phe	Val	Arg	Thr	Val	Gly	Arg	145	150	155	160
Thr	Val	Arg	Leu	Leu	Lys	Met	Ile	Val	Gln	Thr	Asp	Ala	Leu	Pro	Val	165	170	175	
Val	Arg	Glu	Ala	Gly	Ile	Ile	His	Pro	Ser	Val	Phe	Ile	Gly	Ile	Gly	180	185	190	
Ile	Asp	Ile	Phe	Gln	Thr	Val	Ala	Ala	Phe	Gly	Val	Arg	Leu	Val	Val	195	200	205	
Lys	His	Ala	Arg	Thr	Val	Phe	Arg	Ala	His	Gln	Arg	Thr	Val	Phe	Ala	210	215	220	
Val	Gly	Lys	Gln	Thr	Ala	Val	Phe	Val	Val	Ala	Arg	Val	Phe	Ala	Val	225	230	235	240
Ala	Ser	Tyr	Arg	Ser	Val	Phe	Ser	Ile	Phe	Ile	Lys	Asn	Arg	Leu	Gly	245	250	255	

Gln Glu Cys Arg Asn Arg His Ile Ala Arg Val Glu Ser Leu Leu Arg
 260 265 270

Val Phe Glu Tyr Ala Ala Asp Val Val Pro Phe Val Phe Lys Thr Lys
 275 280 285

Thr Arg Ala Glu Gln Pro Arg Ser Ala Phe Val
 290 295

<210> 987
 <211> 1194
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 987
 atgatcgaca gggaccgtat gttgcgggac acgttggaac gtgtgcgtgc ggggtcgttc 60
 tggttatggg tgggtggtggc atcgatgatg tttaccgccg gattttcagg cacttatctt 120
 ctgatggaca atcaggggct gaatttcttt ttagttttgg cgggagtgtt gggcatgaat 180
 acgctgatgc tggcagtatg gttggcaacg ttgttcctgc gcgtgaaagt gggacggttt 240
 ttcagcagtc cggcgacgtg gtttcggggc aaaggccctg taaatcaggc ggtgttgctg 300
 ctgtatgcgg accagtggcg gcaaccttcg gtacgatgga aaataggcgc aacggcgcac 360
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 gccgccaatc gggaacagggt tgccgcgctg gagacagagc tgaagcagaa accggcgcaa 960
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<210> 988
 <211> 397
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 988
 Met Ile Asp Arg Asp Arg Met Leu Arg Asp Thr Leu Glu Arg Val Arg
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 Ala Gly Ser Phe Trp Leu Trp Val Val Val Ala Ser Met Met Phe Thr
 20 25 30
 Ala Gly Phe Ser Gly Thr Tyr Leu Leu Met Asp Asn Gln Gly Leu Asn
 35 40 45
 Phe Phe Leu Val Leu Ala Gly Val Leu Gly Met Asn Thr Leu Met Leu
 50 55 60

Ala	Val	Trp	Leu	Ala	Thr	Leu	Phe	Leu	Arg	Val	Lys	Val	Gly	Arg	Phe	65	70	75	80
Phe	Ser	Ser	Pro	Ala	Thr	Trp	Phe	Arg	Gly	Lys	Gly	Pro	Val	Asn	Gln	85	90	95	
Ala	Val	Leu	Arg	Leu	Tyr	Ala	Asp	Gln	Trp	Arg	Gln	Pro	Ser	Val	Arg	100	105	110	
Trp	Lys	Ile	Gly	Ala	Thr	Ala	His	Ser	Leu	Trp	Leu	Cys	Thr	Leu	Leu	115	120	125	
Gly	Met	Leu	Val	Ser	Val	Leu	Leu	Leu	Leu	Val	Arg	Gln	Tyr	Thr	130	135	140		
Phe	Asn	Trp	Glu	Ser	Thr	Leu	Leu	Ser	Asn	Ala	Ala	Ser	Val	Arg	Ala	145	150	155	160
Val	Glu	Met	Leu	Ala	Trp	Leu	Pro	Ser	Lys	Leu	Gly	Phe	Pro	Val	Pro	165	170	175	
Asp	Ala	Arg	Ala	Val	Ile	Glu	Gly	Arg	Leu	Asn	Gly	Asn	Ile	Ala	Asp	180	185	190	
Ala	Arg	Ala	Trp	Ser	Gly	Leu	Leu	Val	Gly	Ser	Ile	Val	Cys	Tyr	Gly	195	200	205	
Ile	Leu	Pro	Arg	Leu	Leu	Ala	Trp	Val	Val	Cys	Lys	Ile	Leu	Leu	Lys	210	215	220	
Thr	Ser	Glu	Asn	Gly	Leu	Asp	Leu	Glu	Lys	Thr	Tyr	Tyr	Gln	Ala	Val	225	230	235	240
Ile	Arg	Arg	Trp	Gln	Asn	Lys	Ile	Thr	Asp	Ala	Asp	Thr	Arg	Arg	Glu	245	250	255	
Thr	Val	Ser	Ala	Val	Ser	Pro	Lys	Ile	Val	Leu	Asn	Asp	Ala	Pro	Lys	260	265	270	
Trp	Ala	Leu	Met	Leu	Glu	Thr	Glu	Trp	Gln	Asp	Gly	Gln	Trp	Phe	Glu	275	280	285	
Gly	Arg	Leu	Ala	Gln	Glu	Trp	Leu	Asp	Lys	Gly	Val	Ala	Ala	Asn	Arg	290	295	300	
Glu	Gln	Val	Ala	Ala	Leu	Glu	Thr	Glu	Leu	Lys	Gln	Lys	Pro	Ala	Gln	305	310	315	320
Leu	Leu	Ile	Gly	Val	Arg	Ala	Gln	Thr	Val	Pro	Asp	Arg	Gly	Val	Leu	325	330	335	
Arg	Gln	Ile	Val	Arg	Leu	Ser	Glu	Ala	Ala	Gln	Gly	Gly	Ala	Val	Val	340	345	350	
Gln	Leu	Leu	Ala	Glu	Gln	Gly	Leu	Ser	Asp	Asp	Leu	Ser	Glu	Lys	Leu	355	360	365	

Glu His Trp Arg Asn Ala Leu Thr Glu Cys Gly Ala Ala Trp Leu Glu
 370 375 380

Pro Asp Arg Val Ala Gln Glu Gly Arg Leu Lys Asp Gln
 385 390 395

<210> 989

<211> 1194

<212> DNA

<213> *Neisseria meningitidis*

<400> 989

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ttcagcagtc cggcgacgtg gtttcggggc aaagaccctg taaatcaggc ggtgttgctg 300
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gtcggcagta tcgcctgcta cggcatcctg ccgcgcctgc tggcttggtt agtgtgtaaa 660
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<210> 990

<211> 397

<212> PRT

<213> *Neisseria meningitidis*

<400> 990

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 20 25 30

Thr Gly Phe Ser Val Thr Tyr Leu Leu Met Asp Asn Gln Gly Leu Asn
 35 40 45

Phe Phe Leu Val Leu Ala Gly Val Leu Gly Met Asn Thr Leu Met Leu
 50 55 60

Ala Val Trp Leu Ala Met Leu Phe Leu Arg Val Lys Val Gly Arg Phe
 65 70 75 80

Phe	Ser	Ser	Pro	Ala	Thr	Trp	Phe	Arg	Gly	Lys	Asp	Pro	Val	Asn	Gln		
				85					90					95			
Ala	Val	Leu	Arg	Leu	Tyr	Ala	Asp	Glu	Trp	Arg	Gln	Pro	Ser	Val	Arg		
			100					105					110				
Trp	Lys	Ile	Gly	Ala	Thr	Ser	His	Ser	Leu	Trp	Leu	Cys	Thr	Leu	Leu		
		115					120					125					
Gly	Met	Leu	Val	Ser	Val	Leu	Leu	Leu	Leu	Val	Arg	Gln	Tyr	Thr			
	130					135				140							
Phe	Asn	Trp	Glu	Ser	Thr	Leu	Leu	Ser	Asn	Ala	Ala	Ser	Val	Arg	Ala		
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Val	Glu	Met	Leu	Ala	Trp	Leu	Pro	Ser	Lys	Leu	Gly	Phe	Pro	Val	Pro		
			165						170					175			
Asp	Ala	Arg	Ala	Val	Ile	Glu	Gly	Arg	Leu	Asn	Gly	Asn	Ile	Ala	Asp		
			180					185					190				
Ala	Arg	Ala	Trp	Ser	Gly	Leu	Leu	Val	Gly	Ser	Ile	Ala	Cys	Tyr	Gly		
	195					200						205					
Ile	Leu	Pro	Arg	Leu	Leu	Ala	Trp	Val	Val	Cys	Lys	Ile	Leu	Leu	Lys		
	210					215					220						
Thr	Ser	Glu	Asn	Gly	Leu	Asp	Leu	Glu	Lys	Pro	Tyr	Tyr	Gln	Ala	Val		
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Ile	Arg	Arg	Trp	Gln	Asn	Lys	Ile	Thr	Asp	Ala	Asp	Thr	Arg	Arg	Glu		
			245						250					255			
Thr	Val	Ser	Ala	Val	Ser	Pro	Lys	Ile	Ile	Leu	Asn	Asp	Ala	Pro	Lys		
		260						265					270				
Trp	Ala	Val	Met	Leu	Glu	Thr	Glu	Trp	Gln	Asp	Gly	Glu	Trp	Phe	Glu		
	275						280					285					
Gly	Arg	Leu	Ala	Gln	Glu	Trp	Leu	Asp	Lys	Gly	Val	Ala	Thr	Asn	Arg		
	290					295					300						
Glu	Gln	Val	Ala	Ala	Leu	Glu	Thr	Glu	Leu	Lys	Gln	Lys	Pro	Ala	Gln		
305					310					315					320		
Leu	Leu	Ile	Gly	Val	Arg	Ala	Gln	Thr	Val	Pro	Asp	Arg	Gly	Val	Leu		
			325						330					335			
Arg	Gln	Ile	Val	Arg	Leu	Ser	Glu	Ala	Ala	Gln	Gly	Gly	Ala	Val	Val		
		340						345					350				
Gln	Leu	Leu	Ala	Glu	Gln	Gly	Leu	Ser	Asp	Asp	Leu	Ser	Glu	Lys	Leu		
	355					360						365					
Glu	His	Trp	Arg	Asn	Ala	Leu	Ala	Glu	Cys	Gly	Ala	Ala	Trp	Leu	Glu		
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Pro Asp Arg Ala Ala Gln Glu Gly Arg Leu Lys Asp Gln
 385 390 395

<210> 991
 <211> 1203
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 991
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 ctaatggaca atcaggggtct gaatttcttt ttggttttgg cgggcgtgtt gggcatgaat 180
 acgctgatgc tggcagtatg gttggcaatg ttgttcctgc gcgtgaaagt ggggcgtttt 240
 ttcagcagtc cggcgacgtg gtttcggggc aaagaccctg tcaatcaggc ggtggtgcgg 300
 ctgtatgcgg acgagtggcg gcaaccttcg gtacgttggg aaataggcgc aacgtcgcac 360
 agcctgtggc tctgcacgct gctcggaatg ctggtgtcgg tattgttget gcttttggtg 420
 cggcaatata cgttcaactg ggaaagcacg ctggtgggcg attcgtcttc ggtacggctg 480
 gtggaaatgt tggcatggct gcctgcgaaa ctgggttttc ccgtgcctga tgcgcgggcg 540
 gtcatcgaaag gtcgtctgaa cggcaatatt gccgatgcgc gggcttggtc ggggctgctg 600
 gtcggcagta tcgcctgcta cggcatcctg ccgcgcctct tggcttgggc ggtatgcaaa 660
 atccttttga aaacaagcga aaacggcttg gat ttggaaa agccctatta tcaggcgggtc 720
 atccgccgct ggcagaacaa aatcaccgat gcggatacgc gtcgggaaac cgtgtccgcc 780
 gtttcgccga aaatcgtctt gaacgatgcg ccgaaatggg cggtcatgct ggagaccgaa 840
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 tcagacgacc tttcggaaaa gctggaacat tggcgtaacg cgctgaccga atgcggcgcg 1140
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<210> 992
 <211> 400
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 992
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 Ala Gly Ser Phe Trp Leu Trp Val Ala Ala Ala Thr Phe Ala Phe Phe
 20 25 30
 Thr Gly Phe Ser Val Thr Tyr Leu Leu Met Asp Asn Gln Gly Leu Asn
 35 40 45
 Phe Phe Leu Val Leu Ala Gly Val Leu Gly Met Asn Thr Leu Met Leu
 50 55 60
 Ala Val Trp Leu Ala Met Leu Phe Leu Arg Val Lys Val Gly Arg Phe
 65 70 75 80
 Phe Ser Ser Pro Ala Thr Trp Phe Arg Gly Lys Asp Pro Val Asn Gln
 85 90 95

Ala Val Leu Arg Leu Tyr Ala Asp Glu Trp Arg Gln Pro Ser Val Arg
 100 105 110

Trp Lys Ile Gly Ala Thr Ser His Ser Leu Trp Leu Cys Thr Leu Leu
 115 120 125

Gly Met Leu Val Ser Val Leu Leu Leu Leu Val Arg Gln Tyr Thr
 130 135 140

Phe Asn Trp Glu Ser Thr Leu Leu Gly Asp Ser Ser Ser Val Arg Leu
 145 150 155 160

Val Glu Met Leu Ala Trp Leu Pro Ala Lys Leu Gly Phe Pro Val Pro
 165 170 175

Asp Ala Arg Ala Val Ile Glu Gly Arg Leu Asn Gly Asn Ile Ala Asp
 180 185 190

Ala Arg Ala Trp Ser Gly Leu Leu Val Gly Ser Ile Ala Cys Tyr Gly
 195 200 205

Ile Leu Pro Arg Leu Leu Ala Trp Ala Val Cys Lys Ile Leu Leu Lys
 210 215 220

Thr Ser Glu Asn Gly Leu Asp Leu Glu Lys Pro Tyr Tyr Gln Ala Val
 225 230 235 240

Ile Arg Arg Trp Gln Asn Lys Ile Thr Asp Ala Asp Thr Arg Arg Glu
 245 250 255

Thr Val Ser Ala Val Ser Pro Lys Ile Val Leu Asn Asp Ala Pro Lys
 260 265 270

Trp Ala Val Met Leu Glu Thr Glu Trp Gln Asp Gly Glu Trp Phe Glu
 275 280 285

Gly Arg Leu Ala Gln Glu Trp Leu Asp Lys Gly Val Ala Ala Asn Arg
 290 295 300

Glu Gln Val Ala Ala Leu Glu Thr Glu Leu Lys Gln Lys Pro Ala Gln
 305 310 315 320

Leu Leu Ile Gly Val Arg Ala Gln Thr Val Pro Asp Arg Gly Val Leu
 325 330 335

Arg Gln Ile Val Arg Leu Ser Glu Ala Ala Gln Gly Gly Ala Val Val
 340 345 350

Gln Leu Leu Ala Glu Gln Gly Leu Ser Asp Asp Leu Ser Glu Lys Leu
 355 360 365

Glu His Trp Arg Asn Ala Leu Thr Glu Cys Gly Ala Ala Trp Leu Glu
 370 375 380

Pro Asp Arg Ala Ala Gln Glu Gly Arg Leu Lys Thr Asn Asp Arg Thr
 385 390 395 400

<210> 993
 <211> 627
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 993
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 agcgtatcgg ttacggcat cagccttctt ctgctctatt tgagttcctc gctgtaccac 180
 ggaattgcag ccggaaaact gaaaagcatt ttgaaa'aaaa ccgaccactg catgatttat 240
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 ctggcggcag gcggtatgct gtacagcgctc ggcatttact ggtttgtaaa cgatgaaaaa 540
 atccgacacg ggcacggaat ctggcatctg ttcgtattgg gcggcagcat aaccaattt 600
 gtcagcgtgt acggttatgt aatctga 627

<210> 994
 <211> 208
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 994
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 20 25 30
 His Gly Asp Gly Tyr Arg Ile Phe Ser Val Ser Val Tyr Gly Ile Ser
 35 40 45
 Leu Leu Leu Leu Tyr Leu Ser Ser Ser Leu Tyr His Gly Ile Ala Ala
 50 55 60
 Gly Lys Leu Lys Ser Ile Leu Lys Lys Thr Asp His Cys Met Ile Tyr
 65 70 75 80
 Val Leu Ile Ala Gly Ser Tyr Thr Pro Phe Ala Leu Val Ser Leu Arg
 85 90 95
 Asn Gly Pro Gly Trp Thr Val Phe Ser Leu Ser Trp Leu Leu Ala Ala
 100 105 110
 Ala Gly Ile Ala Gln Glu Leu Thr Ile Gly Arg Lys Ser Glu Lys Arg
 115 120 125
 Leu Leu Ser Ile Ala Ile Tyr Ile Val Met Gly Trp Met Val Leu Ala
 130 135 140

Val Met Lys Ser Leu Thr Ala Ser Leu Pro Pro Ala Gly Leu Ala Trp
 145 150 155 160

Leu Ala Ala Gly Gly Met Leu Tyr Ser Val Gly Ile Tyr Trp Phe Val
 165 170 175

Asn Asp Glu Lys Ile Arg His Gly His Gly Ile Trp His Leu Phe Val
 180 185 190

Leu Gly Gly Ser Ile Thr Gln Phe Val Ser Val Tyr Gly Tyr Val Ile
 195 200 205

<210> 995
 <211> 504
 <212> DNA
 <213> Neisseria meningitidis

<400> 995
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 ctgattgccg gaagctacac accgtttgca ctggtttctt tgagaaacgg gccgggctgg 180
 acggtatttt cactgtcctg gctgctggcg gctgcaggaa tcgcacaaga actcaccatc 240

ggacggaaaa gcgaaaaacg tctgctgtct attgtgattt atgtcgtcat gggttggatg 300
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 gcggcaggcg gtatgctgta cagtgtcggc atttactggg ttgtaaacga tgaaaaaatc 420
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 agcgtgtacg gttacgtaat ctga 504

<210> 996
 <211> 167
 <212> PRT
 <213> Neisseria meningitidis

<400> 996
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Leu Tyr His Gly Ile Ala Ala Gly Lys Leu Lys Ser Ile Leu Lys Lys
 20 25 30

Thr Asp His Cys Met Ile Tyr Val Leu Ile Ala Gly Ser Tyr Thr Pro
 35 40 45

Phe Ala Leu Val Ser Leu Arg Asn Gly Pro Gly Trp Thr Val Phe Ser
 50 55 60

Leu Ser Trp Leu Leu Ala Ala Ala Gly Ile Ala Gln Glu Leu Thr Ile
 65 70 75 80

Gly Arg Lys Ser Glu Lys Arg Leu Leu Ser Ile Val Ile Tyr Val Val

85

90

95

Met Gly Trp Met Val Leu Ala Val Met Lys Ser Leu Thr Ala Ser Leu
 100 105 110

Pro Ser Ala Gly Leu Ala Trp Leu Ala Ala Gly Gly Met Leu Tyr Ser
 115 120 125

Val Gly Ile Tyr Trp Phe Val Asn Asp Glu Lys Ile Arg His Gly His
 130 135 140

Gly Ile Trp His Leu Phe Val Leu Gly Gly Ser Ile Thr Gln Phe Val
 145 150 155 160

Ser Val Tyr Gly Tyr Val Ile
 165

<210> 997

<211> 627

<212> DNA

<213> Neisseria meningitidis

<400> 997

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 ggaattgcag ccggaaaact gaaaagcatt ttgaaaaaaa ccgaccactg catgatttat 240
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<210> 998

<211> 208

<212> PRT

<213> Neisseria meningitidis

<400> 998

Met Tyr Thr Gly Glu Arg Phe Asn Thr Tyr Ser His Leu Ser Gly Leu
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Ile Leu Ala Ala Ala Gly Leu Ala Leu Met Leu Leu Lys Thr Ile Gly
 20 25 30

His Gly Asp Gly Tyr Arg Ile Phe Ser Val Ser Val Tyr Gly Ile Ser
 35 40 45

Leu Leu Leu Leu Tyr Leu Ser Ser Ser Leu Tyr His Gly Ile Ala Ala
 50 55 60

Gly Lys Leu Lys Ser Ile Leu Lys Lys Thr Asp His Cys Met Ile Tyr

65		70		75		80									
Val	Leu	Ile	Ala	Gly	Ser	Tyr	Thr	Pro	Phe	Ala	Leu	Val	Ser	Leu	Arg
				85					90					95	
Asn	Gly	Pro	Gly	Trp	Thr	Val	Phe	Ser	Leu	Ser	Trp	Leu	Leu	Ala	Ala
			100					105					110		
Ala	Gly	Ile	Ala	Gln	Glu	Leu	Thr	Ile	Gly	Arg	Lys	Ser	Glu	Lys	Arg
			115					120				125			
Leu	Leu	Ser	Ile	Ala	Ile	Tyr	Ile	Val	Met	Gly	Trp	Met	Val	Leu	Ala
	130					135					140				
Val	Met	Lys	Ser	Leu	Thr	Ala	Ser	Leu	Pro	Pro	Ala	Gly	Leu	Ala	Trp
145					150					155					160
Leu	Ala	Ala	Gly	Gly	Met	Leu	Tyr	Ser	Val	Gly	Ile	Tyr	Trp	Phe	Val
				165					170					175	
Asn	Asp	Glu	Lys	Ile	Arg	His	Gly	His	Gly	Ile	Trp	His	Leu	Phe	Val
			180					185					190		
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		195					200					205			

<210> 999
 <211> 567
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 999
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 gtaggcgatt tcggcatcga ggcggtcgaa aacgggttcg cccaaaccga cggggacgtt 180
 ggcggcttcg atatgcagtt tcgcgccgac ggaatccaag gatttgcgca caccgtccat 240
 atagtgttcc agttcggcga tttggctttg gttggcggca aaaaaaggat tttgggaaat 300
 gtgttcgctg ccttcaaacc ggattttttt ttcgccgact tgggtaacgt aggcggtgat 360
 ttccgtgccg aatttttctt tcagccattt tttggcaacg gctccggcgg caacgcgggc 420
 tgcggtttcg cgggcggaac tcctgccgcc gcccggtag tcgcgcgtac cgtatttgtg 480
 ccaataggtg tagtcggcgt gtccggggcg gaaggcgggtg gcgatgtcgc cgtagtcttc 540
 gctgcgctgg tcggtgttgc ggattag 567

<210> 1000
 <211> 188
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 1000
 Met Val Gly Gln Glu Ala Leu Arg Gly Gln Phe Val Ala Val Phe Ala
 1 5 10 15

Ala Ala Leu Arg Tyr Ala Val Lys Thr Cys Ala Asp Phe His Ala Phe
20 25 30

Asp Gly Val Asp Ala His His Arg Val Gly Asp Phe Gly Ile Glu Ala
35 40 45

Val Glu Asn Gly Phe Ala Gln Thr Asp Gly Asp Val Gly Gly Phe Asp
50 55 60

Met Gln Phe Arg Ala Asp Gly Ile Gln Gly Phe Ala His Thr Val His
65 70 75 80

Ile Val Phe Gln Phe Gly Asp Leu Ala Leu Val Gly Gly Lys Lys Arg
85 90 95

Ile Leu Gly Asn Val Phe Ala Ala Phe Lys Pro Asp Phe Phe Phe Ala
100 105 110

Asp Leu Gly Asn Val Gly Gly Asp Phe Arg Ala Glu Phe Phe Phe Gln
115 120 125

Pro Phe Phe Gly Asn Gly Ser Gly Gly Asn Ala Gly Cys Gly Phe Ala
130 135 140

Gly Gly Thr Pro Ala Ala Ala Pro Val Val Ala Arg Thr Val Phe Val
145 150 155 160

Pro Ile Gly Ile Val Gly Val Ser Gly Ala Glu Gly Gly Gly Asp Val
165 170 175

Ala Val Val Phe Ala Ala Leu Val Gly Val Ala Asp
180 185

<210> 1001

<211> 567

<212> DNA

<213> *Neisseria meningitidis*

<400> 1001

gtggttgac aggaagcctt gcggggtcag ttcgtcgccg tgttcgctgc cgcgttgctg 60
tacgctgtca aaacctgcgc cgatttccac gcctttgacg gcgttgatgc ccatcatcgc 120
gtaggcgatt tcggcatcga ggcgggtcaaa aacaggttcg cccaagccga caggacatt 180
ggctgcttcg atatgcagct tcgcgccgac ggaatccaag gatttgcgca cgctgtccat 240
atagttttcc agctcggcaa tttggctatg gttggcggca aaaaaaggat tttgggaaat 300
gtgttcgcag ccttcaaacc ggatttcttt ttcgccgact tgggtaacgt aggcggtgat 360
ttccgtgccg aatttttctt tcaaccattt tttggcaacg gctccggcag caacgcgggc 420
ggcggtttca cgggcggagc tcctgcccgc gccgcggtag tcgcgcgtgc cgtatttgtg 480
ccaataghta tagtcggcgt ggccggggcg gaagctggtg gcgatgttgc cgtagtcctt 540
gctgcgctgg tcggtattgc ggattaa 567

<210> 1002

<211> 188

<212> PRT

<213> *Neisseria meningitidis*

<400> 1002

Val Val Gly Gln Glu Ala Leu Arg Gly Gln Phe Val Ala Val Phe Ala
1 5 10 15

Ala Ala Leu Arg Tyr Ala Val Lys Thr Cys Ala Asp Phe His Ala Phe
20 25 30

Asp Gly Val Asp Ala His His Arg Val Gly Asp Phe Gly Ile Glu Ala
35 40 45

Val Lys Asn Arg Phe Ala Gln Ala Asp Arg Asp Ile Gly Cys Phe Asp
50 55 60

Met Gln Leu Arg Ala Asp Gly Ile Gln Gly Phe Ala His Ala Val His
65 70 75 80

Ile Val Phe Gln Leu Gly Asn Leu Ala Met Val Gly Gly Lys Lys Arg
85 90 95

Ile Leu Gly Asn Val Phe Ala Ala Phe Lys Pro Asp Phe Phe Phe Ala
100 105 110

Asp Leu Gly Asn Val Gly Gly Asp Phe Arg Ala Glu Phe Phe Phe Gln
115 120 125

Pro Phe Phe Gly Asn Gly Ser Gly Ser Asn Ala Gly Gly Gly Phe Thr
130 135 140

Gly Gly Ala Pro Ala Ala Ala Val Val Ala Arg Ala Val Phe Val
145 150 155 160

Pro Ile Gly Ile Val Gly Val Ala Gly Ala Glu Ala Gly Gly Asp Val
165 170 175

Ala Val Val Phe Ala Ala Leu Val Gly Ile Ala Asp
180 185

<210> 1003

<211> 567

<212> DNA

<213> Neisseria meningitidis

<400> 1003

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tacgctgtca aaacctgcgc cgatttccac gcctttgacg gcgttgatgc ccatcatggc 120
gtaggcgatt tcggcatcga ggcggtcgaa tacgggttcg cccaagccga cggggacgtt 180
ggcggttca atatgcagct tcgcgccgac ggaatccaag gatttgcgca cgctgtccat 240
atagttttcc agctcgcaa tttggctatg gttggcggca aaaaaaggat tttgggaaat 300
gtgttcgcag ccttcaaacc ggatttcttt ttcgccgact tgggtaacgt aggcggtgat 360
ttccgtgccg aatttttctt tcaaccattt tttggcaacg gctccggcgg caacgcgggc 420
ggcggtttcg cgggcggaac tcctgccgcc gccccggtag tcgcgcgtgc cgtatttgtg 480
ccaataggta tagtcggcgt ggccggggcg gaagctggtg gcgatgttgc cgtagtcttt 540
gctgcgctgg tcggtattgc ggattaa 567

<210> 1004
<211> 188
<212> PRT
<213> Neisseria meningitidis

<400> 1004
Val Val Gly Gln Glu Ala Leu Arg Gly Glu Phe Val Ala Val Phe Ala
1 5 10 15
Ala Ala Leu Arg Tyr Ala Val Lys Thr Cys Ala Asp Phe His Ala Phe
20 25 30
Asp Gly Val Asp Ala His His Gly Val Gly Asp Phe Gly Ile Glu Ala
35 40 45
Val Glu Tyr Gly Phe Ala Gln Ala Asp Gly Asp Val Gly Gly Phe Asn
50 55 60
Met Gln Leu Arg Ala Asp Gly Ile Gln Gly Phe Ala His Ala Val His
65 70 75 80
Ile Val Phe Gln Leu Gly Asn Leu Ala Met Val Gly Gly Lys Lys Arg
85 90 95
Ile Leu Gly Asn Val Phe Ala Ala Phe Lys Pro Asp Phe Phe Phe Ala
100 105 110
Asp Leu Gly Asn Val Gly Gly Asp Phe Arg Ala Glu Phe Phe Phe Gln
115 120 125
Pro Phe Phe Gly Asn Gly Ser Gly Gly Asn Ala Gly Gly Gly Phe Ala
130 135 140
Gly Gly Thr Pro Ala Ala Ala Pro Val Val Ala Arg Ala Val Phe Val
145 150 155 160
Pro Ile Gly Ile Val Gly Val Ala Gly Ala Glu Ala Gly Gly Asp Val
165 170 175
Ala Val Val Phe Ala Ala Leu Val Gly Ile Ala Asp
180 185

<210> 1005
<211> 720
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1005
atgctcgcgg tacgcaatcg gggttggcac ggcgcagtcg tccatttccg cagctgcggc 60
ggcgtagcga acaccgcccc ggtgttctac cacttggtg ataccgccga aatgccttt 120
gctttggaca cgctcaccgc gcgttaccgt gaaatatacg ccgtcggcgt atcgctgggc 180
ggcaacgcgc cggcaaaata ttggggcgaa caggggcaaaa aggcattgcc gcacgcctcg 240
gccgccgtat ccgcccccggt tgatgcagag gcggcaggca gccgcttcga cagcggcatc 300
acgcggctgc tctacacgcg ctacttcctc cgcacactga tacccaaagc acgttcgctc 360
caagggtttt agacggcatt tgccgcaggg tgcaaaacac tgggcgagtt tgacgaccgt 420
ttcaccgcac cgctgcacgg ctttgccgac cggcacgact actaccgcc aacttcctgc 480

aaaccgctgc tcaaacacgt tgccaaaccg ctgctcctgc tcaatgccgc caacgacccc 540
 ttcctgccgc ccgaagccct gccccgtgca gacgaagcgt ccgaagccgt taccctgttc 600
 caacctgcac acggcgggca cgccggcttt gtcagcagca ccggcggcag gctgcacctg 660
 caatggctgc cgcagaccgt cctgtcctat tttagacagt tccgcacaaa caggcgtaa 720

<210> 1006

<211> 239

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1006

Met Leu Ala Val Arg Asn Arg Gly Trp His Gly Ala Val Val His Phe
 1 5 10 15

Arg Ser Cys Gly Gly Val Ala Asn Thr Ala Pro Val Phe Tyr His Leu
 20 25 30

Gly Asp Thr Ala Glu Ile Ala Phe Ala Leu Asp Thr Leu Thr Ala Arg
 35 40 45

Tyr Arg Glu Ile Tyr Ala Val Gly Val Ser Leu Gly Gly Asn Ala Pro
 50 55 60

Ala Lys Tyr Leu Gly Glu Gln Gly Lys Lys Ala Leu Pro His Ala Ser
 65 70 75 80

Ala Ala Val Ser Ala Pro Val Asp Ala Glu Ala Ala Gly Ser Arg Phe
 85 90 95

Asp Ser Gly Ile Thr Arg Leu Leu Tyr Thr Arg Tyr Phe Leu Arg Thr
 100 105 110

Leu Ile Pro Lys Ala Arg Ser Leu Gln Gly Phe Gln Thr Ala Phe Ala
 115 120 125

Ala Gly Cys Lys Thr Leu Gly Glu Phe Asp Asp Arg Phe Thr Ala Pro
 130 135 140

Leu His Gly Phe Ala Asp Arg His Asp Tyr Tyr Arg Gln Thr Ser Cys
 145 150 155 160

Lys Pro Leu Leu Lys His Val Ala Lys Pro Leu Leu Leu Leu Asn Ala
 165 170 175

Ala Asn Asp Pro Phe Leu Pro Pro Glu Ala Leu Pro Arg Ala Asp Glu
 180 185 190

Ala Ser Glu Ala Val Thr Leu Phe Gln Pro Ala His Gly Gly His Ala
 195 200 205

Gly Phe Val Ser Ser Thr Gly Gly Arg Leu His Leu Gln Trp Leu Pro
 210 215 220

Gln Thr Val Leu Ser Tyr Phe Asp Ser Phe Arg Thr Asn Arg Arg
 225 230 235

<210> 1007
 <211> 719
 <212> DNA
 <213> Neisseria meningitidis

<400> 1007
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 ggcattgcc aacacgctcc ggtgttctac cacttggcga taccgccgaa atcgcttta 120
 ctttggacac gttcgccgcg cgttaccgtg aaatatacgc cgtcggcgta tcgctgggcg 180
 gcaacgcgct ggcaaaatat ttgggcgaac agggcaaaaa ggcattgccg caagccgctg 240
 ccgtcatctc cgcgcccgtc gatgcagagg cggcaggcag acgcttcgac agcggcatca 300
 cgcggtgct ctacacgcgc tacttctctc gcaccctgat acccaaagca aaatcgctcc 360
 aaggttttca gacggcattt gccgcagggt gcaaaacact gggcgagttt gacgaccgt 420
 tcaccgcacc gctgcacggc ttgcccagacc ggacagacta ctaccgcaa acttcctgca 480
 aaccgctgct caaacacgtt gccaaaccgc tgctcctgct caatgccgtc aacgaccct 540
 tcctgccgcc cgaagccctg ccccgcgag acgaagtatc cgaagccgtt accctgttcc 600
 agccggcata tgggtggtcat gtcggttttg tcagcagcac cggcggcagg ctgcacctgc 660
 aatggctgcc gcagaccgtc ctgtctatt tcgacagctt ccgcacaaac aggcgttaa 719

<210> 1008
 <211> 239
 <212> PRT
 <213> Neisseria meningitidis

<400> 1008
 Met Leu Ala Val Arg Asp Arg Gly Trp His Gly Val Val Val His Phe
 1 5 10 15
 Arg Ser Cys Gly Gly Ile Ala Asn Thr Ala Pro Val Phe Tyr Xaa Leu
 20 25 30
 Gly Asp Thr Ala Glu Ile Ala Phe Thr Leu Asp Thr Phe Ala Ala Arg
 35 40 45
 Tyr Arg Glu Ile Tyr Ala Val Gly Val Ser Leu Gly Gly Asn Ala Leu
 50 55 60
 Ala Lys Tyr Leu Gly Glu Gln Gly Lys Lys Ala Leu Pro Gln Ala Ala
 65 70 75 80
 Ala Val Ile Ser Ala Pro Val Asp Ala Glu Ala Ala Gly Arg Arg Phe
 85 90 95
 Asp Ser Gly Ile Thr Arg Leu Leu Tyr Thr Arg Tyr Phe Leu Arg Thr
 100 105 110
 Leu Ile Pro Lys Ala Lys Ser Leu Gln Gly Phe Gln Thr Ala Phe Ala
 115 120 125
 Ala Gly Cys Lys Thr Leu Gly Glu Phe Asp Asp Arg Phe Thr Ala Pro
 130 135 140
 Leu His Gly Phe Ala Asp Arg His Asp Tyr Tyr Arg Gln Thr Ser Cys
 145 150 155 160

Lys Pro Leu Leu Lys His Val Ala Lys Pro Leu Leu Leu Leu Asn Ala
 165 170 175
 Val Asn Asp Pro Phe Leu Pro Pro Glu Ala Leu Pro Arg Ala Asp Glu
 180 185 190
 Val Ser Glu Ala Val Thr Leu Phe Gln Pro Ala Tyr Gly Gly His Val
 195 200 205
 Gly Phe Val Ser Ser Thr Gly Gly Arg Leu His Leu Gln Trp Leu Pro
 210 215 220
 Gln Thr Val Leu Ser Tyr Phe Asp Ser Phe Arg Thr Asn Arg Arg
 225 230 235

<210> 1009
 <211> 720
 <212> DNA
 <213> Neisseria meningitidis

<400> 1009
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 ggcgtagcga acaccgcccc ggtgttctac cacttgggcg ataccgccga aattgccttt 120
 actttggaca cgctcgccgc gcgttaccgt gaaatatacg ccgtcggcgt atcgctgggc 180
 ggcaacgcgc tggcaaaata tttgggcgaa cagggcgaaa acgcgctgcc gcaagccgcc 240
 gccgtcatct ccgcaccgt cgatgcagag gcggcaggca accgcttcga cagcggcatc 300
 acacggctgc tctacacgcg ctacttcctc cgcacactga tacccaaagc acggtcgctc 360
 caaggttttc agacggcatt tgccgcaggg tgcaaaacac tgggcgagtt tgacgaccgt 420
 ttcaccgcac cgctgcacgg ctttgccgat cggcacgact actaccgcc aacttcctgc 480
 aaaccgctgc tcaaacacgt tgccaaaccg ctgctcctgc tcaatgccgt caacgacccc 540
 ttctgcccgc ccgaagcgt gccccgcgca gacgaagtgt ccgaagccgt taccctgttc 600
 cagccgacac acggttggtc tgtcggcttt gtcggcagca ccggcggcag gctgcacctg 660
 caatggttgc cgcagaccgt cctgtcctat ttcgacagct tccgcacaaa caggcgtaa 720

<210> 1010
 <211> 239
 <212> PRT
 <213> Neisseria meningitidis

<400> 1010
 Met Leu Ala Val Arg Asp Arg Gly Trp Asn Gly Val Val Val His Phe
 1 5 10 15
 Arg Ser Cys Gly Gly Val Ala Asn Thr Ala Pro Val Phe Tyr His Leu
 20 25 30
 Gly Asp Thr Ala Glu Ile Ala Phe Thr Leu Asp Thr Leu Ala Ala Arg
 35 40 45
 Tyr Arg Glu Ile Tyr Ala Val Gly Val Ser Leu Gly Gly Asn Ala Leu
 50 55 60
 Ala Lys Tyr Leu Gly Glu Gln Gly Glu Asn Ala Leu Pro Gln Ala Ala
 65 70 75 80

Ala Val Ile Ser Ala Pro Val Asp Ala Glu Ala Ala Gly Asn Arg Phe
85 90 95

Asp Ser Gly Ile Thr Arg Leu Leu Tyr Thr Arg Tyr Phe Leu Arg Thr
100 105 110

Leu Ile Pro Lys Ala Arg Ser Leu Gln Gly Phe Gln Thr Ala Phe Ala
115 120 125

Ala Gly Cys Lys Thr Leu Gly Glu Phe Asp Asp Arg Phe Thr Ala Pro
130 135 140

Leu His Gly Phe Ala Asp Arg His Asp Tyr Tyr Arg Gln Thr Ser Cys
145 150 155 160

Lys Pro Leu Leu Lys His Val Ala Lys Pro Leu Leu Leu Leu Asn Ala
165 170 175

Val Asn Asp Pro Phe Leu Pro Pro Glu Ala Leu Pro Arg Ala Asp Glu
180 185 190

Val Ser Glu Ala Val Thr Leu Phe Gln Pro Thr His Gly Gly His Val
195 200 205

Gly Phe Val Gly Ser Thr Gly Gly Arg Leu His Leu Gln Trp Leu Pro
210 215 220

Gln Thr Val Leu Ser Tyr Phe Asp Ser Phe Arg Thr Asn Arg Arg
225 230 235

<210> 1011
<211> 960
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1011
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gccgcaaat tcctgcaaca ccccgcaccc gcataccgcc gcgagatgct tcccgcacagc 120
acgggtaaaa ccaaaaccgc ctacgacttt tcagcaggcg gcatttcgcc cgatgcgcgcg 180
ctggctcgtgc tgtttcacgg tttggaagga agcagccgca gccattacgc ggtcgaactg 240
atgctcgcgg tacgcaatcg gggttggcac ggcgagtcg tccatttcgc cagctgcggc 300
ggcgtagcga acaccgcccc ggtgttctac cacttgggtg ataccgccga aatcgccctt 360
gctttggaca cgctcaccgc gcgttaccgt gaaatatacg ccgtcggcgt atcgctgggc 420
ggcaacgcgc cggcaaaata tttgggcgaa cagggcaaaa aggcattgcc gcacgcctcg 480
gccgccgtat ccgcccccg tgcagcagag gcggcaggca gccgcttcga cagcggcatc 540
acgcggctgc tctacacgcg ctacttcctc cgcacactga tacccaaagc acgttcgctc 600
caaggttttc agacggcatt tgccgcaggg tgcaaaacac tgggcgagtt tgacgaccgt 660
ttcaccgcac cgctgcacgg ctttgccgac cggcacgact actaccgcca aacttcctgc 720
aaaccgctgc tcaaacacgt tgccaaaccg ctgctcctgc tcaatgccgc caacgacccc 780
ttcctgccgc ccgaagccct gccccgtgca gacgaagcgt ccgaagccgt taccctgttc 840
caacctgcac acggcgggca cgccggcttt gtcagcagca ccggcggcag gctgcacctg 900
caatggctgc cgcagaccgt cctgtcctat tttgacagct tccgcacaaa caggcggttaa 960

<210> 1012

<211> 319
<212> PRT
<213> *Neisseria gonorrhoeae*

<400> 1012

Met	Ile	Leu	Thr	Pro	Pro	Asp	Thr	Pro	Phe	Phe	Leu	Arg	Asn	Gly	Asn
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Ala	Asp	Thr	Ile	Ala	Ala	Lys	Phe	Leu	Gln	His	Pro	Ala	Pro	Ala	Tyr
			20					25					30		
Arg	Arg	Glu	Met	Leu	Pro	Asp	Ser	Thr	Gly	Lys	Thr	Lys	Thr	Ala	Tyr
		35					40					45			
Asp	Phe	Ser	Ala	Gly	Gly	Ile	Ser	Pro	Asp	Ala	Pro	Leu	Val	Val	Leu
	50					55					60				
Phe	His	Gly	Leu	Glu	Gly	Ser	Ser	Arg	Ser	His	Tyr	Ala	Val	Glu	Leu
	65				70					75					80
Met	Leu	Ala	Val	Arg	Asn	Arg	Gly	Trp	His	Gly	Ala	Val	Val	His	Phe
				85					90					95	
Arg	Ser	Cys	Gly	Gly	Val	Ala	Asn	Thr	Ala	Pro	Val	Phe	Tyr	His	Leu
			100					105					110		
Gly	Asp	Thr	Ala	Glu	Ile	Ala	Phe	Ala	Leu	Asp	Thr	Leu	Thr	Ala	Arg
		115					120					125			
Tyr	Arg	Glu	Ile	Tyr	Ala	Val	Gly	Val	Ser	Leu	Gly	Gly	Asn	Ala	Pro
	130					135					140				
Ala	Lys	Tyr	Leu	Gly	Glu	Gln	Gly	Lys	Lys	Ala	Leu	Pro	His	Ala	Ser
	145				150					155					160
Ala	Ala	Val	Ser	Ala	Pro	Val	Asp	Ala	Glu	Ala	Ala	Gly	Ser	Arg	Phe
				165					170					175	
Asp	Ser	Gly	Ile	Thr	Arg	Leu	Leu	Tyr	Thr	Arg	Tyr	Phe	Leu	Arg	Thr
			180					185					190		
Leu	Ile	Pro	Lys	Ala	Arg	Ser	Leu	Gln	Gly	Phe	Gln	Thr	Ala	Phe	Ala
		195					200					205			
Ala	Gly	Cys	Lys	Thr	Leu	Gly	Glu	Phe	Asp	Asp	Arg	Phe	Thr	Ala	Pro
	210					215					220				
Leu	His	Gly	Phe	Ala	Asp	Arg	His	Asp	Tyr	Tyr	Arg	Gln	Thr	Ser	Cys
	225				230					235					240
Lys	Pro	Leu	Leu	Lys	His	Val	Ala	Lys	Pro	Leu	Leu	Leu	Leu	Asn	Ala
				245					250					255	
Ala	Asn	Asp	Pro	Phe	Leu	Pro	Pro	Glu	Ala	Leu	Pro	Arg	Ala	Asp	Glu
			260					265					270		

Ala Ser Glu Ala Val Thr Leu Phe Gln Pro Ala His Gly Gly His Ala
275 280 285

Gly Phe Val Ser Ser Thr Gly Gly Arg Leu His Leu Gln Trp Leu Pro
290 295 300

Gln Thr Val Leu Ser Tyr Phe Asp Ser Phe Arg Thr Asn Arg Arg
305 310 315

<210> 1013

<211> 957

<212> DNA

<213> *Neisseria meningitidis*

<400> 1013

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acgggtaaaa ccaaagtcgc ctacgacttt tcagacggca ttctgcccga tgcgcccgtg 180
gtcgtgctgt ttcacggttt ggaaggaagc agccgcagcc attacgcggt cgaactgatg 240
cttgccgtac gcgatcgggg ttggcacggc gtagtcgtcc atttccgcag ctgcggcggc 300
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cggctgctct acacgcgcta ctctctccgc accctgatac ccaaagcaaa atcgctccaa 600
ggttttcaga cggcatttgc cgcagggtgc aaaacactgg gcgagtttga cgaccgcttc 660
accgcaccgc tgcacggctt tgccgaccgg cagcactact accgccaac ttcttgcaaa 720
ccgctgctca aacacgttgc caaacgctg ctctgtctca atgccgtcaa cgaccccttc 780
ctgccgcccg aagccctgcc ccgcgcagac gaagtatccg aagccgttac cctgttccag 840
ccggcatatg gtggtcatgt cggctttgtc agcagcaccg gcggcaggct gcacctgcaa 900
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<210> 1014

<211> 318

<212> PRT

<213> *Neisseria meningitidis*

<400> 1014

Met Ile Leu Thr Pro Pro Asp Thr Pro Phe Phe Leu Arg Asn Gly Asn
1 5 10 15

Ala Asp Thr Ile Ala Ala Lys Phe Leu Gln Arg Pro Ala Pro Ala Tyr
20 25 30

Arg Arg Glu Leu Leu Pro Asp Ser Thr Gly Lys Thr Lys Val Ala Tyr
35 40 45

Asp Phe Ser Asp Gly Ile Ser Pro Asp Ala Pro Leu Val Val Leu Phe
50 55 60

His Gly Leu Glu Gly Ser Ser Arg Ser His Tyr Ala Val Glu Leu Met
65 70 75 80

Leu Ala Val Arg Asp Arg Gly Trp His Gly Val Val Val His Phe Arg
85 90 95

Ser Cys Gly Gly Ile Ala Asn Thr Ala Pro Val Phe Tyr His Leu Gly
 100 105 110
 Asp Thr Ala Glu Ile Ala Phe Thr Leu Asp Thr Phe Ala Ala Arg Tyr
 115 120 125
 Arg Glu Ile Tyr Ala Val Gly Val Ser Leu Gly Gly Asn Ala Leu Ala
 130 135 140
 Lys Tyr Leu Gly Glu Gln Gly Lys Lys Ala Leu Pro Gln Ala Ala Ala
 145 150 155 160
 Val Ile Ser Ala Pro Val Asp Ala Glu Ala Ala Gly Arg Arg Phe Asp
 165 170 175
 Ser Gly Ile Thr Arg Leu Leu Tyr Thr Arg Tyr Phe Leu Arg Thr Leu
 180 185 190
 Ile Pro Lys Ala Lys Ser Leu Gln Gly Phe Gln Thr Ala Phe Ala Ala
 195 200 205
 Gly Cys Lys Thr Leu Gly Glu Phe Asp Asp Arg Phe Thr Ala Pro Leu
 210 215 220
 His Gly Phe Ala Asp Arg His Asp Tyr Tyr Arg Gln Thr Ser Cys Lys
 225 230 235 240
 Pro Leu Leu Lys His Val Ala Lys Pro Leu Leu Leu Leu Asn Ala Val
 245 250 255
 Asn Asp Pro Phe Leu Pro Pro Glu Ala Leu Pro Arg Ala Asp Glu Val
 260 265 270
 Ser Glu Ala Val Thr Leu Phe Gln Pro Ala Tyr Gly Gly His Val Gly
 275 280 285
 Phe Val Ser Ser Thr Gly Gly Arg Leu His Leu Gln Trp Leu Pro Gln
 290 295 300
 Thr Val Leu Ser Tyr Phe Asp Ser Phe Arg Thr Asn Arg Arg
 305 310 315

<210> 1015

<211> 957

<212> DNA

<213> Neisseria meningitidis

<400> 1015

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 acgggtaaaa ccaaaaccgc ctacgacttt tcagacggca ttccgcccga tgcgccgctg 180
 gtcgtgctgt ttcacggttt ggagggcggc agtggcagcc attacgcggt cgaactgatg 240
 ctgcggttac gcgatcgggg ttggaacggc gtagtcgtcc atttccgcag ctgcggcggc 300
 gtagcgaaca ccgccccggt gttctaccac ttgggcgata ccgccgaaat tgcctttact 360
 ttggacacgc tcgccgcgcg ttaccgtgaa atatacgccg tcggcgtatc gctgggcggc 420

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aacgcgctgg caaaatattt gggcgaacag ggcgaaaacg cgctgccgca agccgcccgc 480
gtcatctccg caccgctcga tgcagaggcg gcaggcaacc gcttcgacag cggcatcaca 540
cggtctgtct acacgcgcta ctctctccgc aacttgatac ccaaagcacg gtcgctccaa 600
ggttttcaga cggcatttgc cgcagggtgc aaaacactgg gcgagtttga cgaccgtttc 660
accgcaccgc tgcacggctt tgccgatcgg cagcactact accgcaaac ttcctgcaaa 720
ccgctgctca aacacgttgc caaacgctg ctctgctca atgccgtcaa cgacccttc 780
ctgccgcccg aagcgtgcc ccgcgcagac gaagtgtccg aagcgttac cctgttccag 840
ccgacacacg gtggtcatgt cggctttgtc ggcagcaccg gcggcaggct gcacctgcaa 900
tggttgccgc agaccgtcct gtcctatttc gacagcttcc gcacaaacag gcgttaa 957

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<210> 1016

<211> 318

<212> PRT

<213> Neisseria meningitidis

<400> 1016

```

Met Ile Leu Thr Pro Pro Asp Thr Pro Phe Phe Leu Arg Asn Gly Asn
  1             5             10             15

Ala Asp Thr Ile Ala Ala Lys Phe Leu Gln Arg Ser Ala Pro Ala Tyr
      20             25             30

Arg Arg Glu Leu Leu Pro Asp Ser Thr Gly Lys Thr Lys Thr Ala Tyr
      35             40             45

Asp Phe Ser Asp Gly Ile Ser Pro Asp Ala Pro Leu Val Val Leu Phe
      50             55             60

His Gly Leu Glu Gly Gly Ser Gly Ser His Tyr Ala Val Glu Leu Met
      65             70             75             80

Leu Ala Val Arg Asp Arg Gly Trp Asn Gly Val Val Val His Phe Arg
      85             90             95

Ser Cys Gly Gly Val Ala Asn Thr Ala Pro Val Phe Tyr His Leu Gly
      100            105            110

Asp Thr Ala Glu Ile Ala Phe Thr Leu Asp Thr Leu Ala Ala Arg Tyr
      115            120            125

Arg Glu Ile Tyr Ala Val Gly Val Ser Leu Gly Gly Asn Ala Leu Ala
      130            135            140

Lys Tyr Leu Gly Glu Gln Gly Glu Asn Ala Leu Pro Gln Ala Ala Ala
      145            150            155            160

Val Ile Ser Ala Pro Val Asp Ala Glu Ala Ala Gly Asn Arg Phe Asp
      165            170            175

Ser Gly Ile Thr Arg Leu Leu Tyr Thr Arg Tyr Phe Leu Arg Thr Leu
      180            185            190

Ile Pro Lys Ala Arg Ser Leu Gln Gly Phe Gln Thr Ala Phe Ala Ala
      195            200            205

Gly Cys Lys Thr Leu Gly Glu Phe Asp Asp Arg Phe Thr Ala Pro Leu

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210	215	220
His Gly Phe Ala Asp Arg His Asp Tyr Tyr Arg Gln Thr Ser Cys Lys		
225	230	235 240
Pro Leu Leu Lys His Val Ala Lys Pro Leu Leu Leu Leu Asn Ala Val		
	245	250 255
Asn Asp Pro Phe Leu Pro Pro Glu Ala Leu Pro Arg Ala Asp Glu Val		
	260	265 270
Ser Glu Ala Val Thr Leu Phe Gln Pro Thr His Gly Gly His Val Gly		
	275	280 285
Phe Val Gly Ser Thr Gly Gly Arg Leu His Leu Gln Trp Leu Pro Gln		
	290	295 300
Thr Val Leu Ser Tyr Phe Asp Ser Phe Arg Thr Asn Arg Arg		
305	310	315

<210> 1017
 <211> 381
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1017
 atgggcaggc atttcgggcg cagacgtttt ctgacggctg ccgccgttgc tgtggccggt 60
 gcggcggttt cttttttgcc gaatcctttt gccgccggcg gcgaaaaacg caacatggat 120
 aaaaaacgcg atgaaaatgt gtttttctgg aaagggtgtcg cgctgggttc cggcgcgag 180
 ctgcgcctgt tcggcgtgga cgacagacag gcggcggatt tggtaataa ggttttggcg 240
 gaagtggcg gtttggaataa aatgttcagc ctttaccgtg aagacagcct gatcagccgt 300
 ctgaaccgag acggttatct gacttcgcct ccggcggatt ttttggaact gttgagcctg 360
 gccgcgatat tcacgcgctg a 381

<210> 1018
 <211> 126
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 1018
 Met Gly Arg His Phe Gly Arg Arg Arg Phe Leu Thr Ala Ala Ala Val
 1 5 10 15
 Ala Val Ala Gly Ala Ala Val Ser Phe Leu Pro Asn Pro Phe Ala Ala
 20 25 30
 Gly Gly Glu Lys Arg Asn Met Asp Lys Lys Arg Asp Glu Asn Val Phe
 35 40 45
 Phe Trp Lys Gly Val Ala Leu Gly Ser Gly Ala Glu Leu Arg Leu Phe
 50 55 60
 Gly Val Asp Asp Arg Gln Ala Ala Asp Leu Val Asn Lys Val Leu Ala
 65 70 75 80

Glu Val Ala Arg Leu Glu Lys Met Phe Ser Leu Tyr Arg Glu Asp Ser
85 90 95

Leu Ile Ser Arg Leu Asn Arg Asp Gly Tyr Leu Thr Ser Pro Pro Ala
100 105 110

Asp Phe Leu Glu Leu Leu Ser Leu Ala Ala Ile Phe Thr Arg
115 120 125

<210> 1019

<211> 378

<212> DNA

<213> Neisseria meningitidis

<400> 1019

atgggcaggc atttcgggcg cagcgttttc tgacggttgc cgccggttgc gcggggacgc 60
ggcggtttct ttctgccga atccttttgc cgccgatgat gaaaaacgca acggggatga 120
aaaacgcaat gaaaatgtgt ttttctggaa aggtgtcgca ctgggttccg gtgcggactc 180
cgtctgttcg gtgtggacga caggcgtgcg gcggatttgg tcaacaagg tttggcggaa 240
gtggcgcggt tggaaaaatt gttcagcctt taccgtgaag acagcctgat cagccgcctg 300
aacagggacg gttatctgac ttcgccgtcg gcggattttt tggaactgkt gagcctggcc 360
gcgatattca cgckctga 378

<210> 1020

<211> 126

<212> PRT

<213> Neisseria meningitidis

<400> 1020

Met Gly Arg His Phe Gly Xaa Gln Arg Phe Leu Thr Val Ala Ala Val
1 5 10 15

Ala Ala Gly Xaa Ala Ala Val Ser Phe Leu Pro Asn Pro Phe Ala Ala
20 25 30

Asp Asp Glu Lys Arg Asn Gly Asp Glu Lys Arg Asn Glu Asn Val Phe
35 40 45

Phe Trp Lys Gly Val Ala Leu Gly Ser Gly Ala Xaa Leu Arg Leu Phe
50 55 60

Gly Val Asp Asp Arg Arg Ala Ala Asp Leu Val Asn Lys Val Leu Ala
65 70 75 80

Glu Val Ala Arg Leu Glu Lys Leu Phe Ser Leu Tyr Arg Glu Asp Ser
85 90 95

Leu Ile Ser Arg Leu Asn Arg Asp Gly Tyr Leu Thr Ser Pro Ser Ala
100 105 110

Asp Phe Leu Glu Leu Xaa Ser Leu Ala Ala Ile Phe Thr Xaa
115 120 125

<210> 1021

<211> 381
<212> DNA
<213> *Neisseria meningitidis*

<400> 1021

```
atgggcaggc atttcgggcg caggcgtttt ttgacagttg ccgccgttgc ggccggcgggc 60
gcggcggttt ctttcctgcc gaatcctttt gccgccgatg atgaaaaacg caataaagat 120
gaaaaacgca atgaaaatgt gtttttcttg aaagggtgctg cactgggttc cggcgcgag 180
ctccgtctgt tcgggtgtga cgacaggcgt gcggcggatt tggtaacaa ggttttggcg 240
gaagtggcgc gtttgaaaaa aatgttcagc ctttaccgtg aagacagcct gatcagccgt 300
ctgaaccgtg acggttattt gacttcgccg ccggcggatt ttttggaact gttgagcctg 360
gccgtgatat tcacgcgctg a 381
```

<210> 1022
<211> 126
<212> PRT
<213> *Neisseria meningitidis*

<400> 1022

```
Met Gly Arg His Phe Gly Arg Arg Arg Phe Leu Thr Val Ala Ala Val
 1             5             10             15

Ala Ala Ala Gly Ala Ala Val Ser Phe Leu Pro Asn Pro Phe Ala Ala
          20             25             30

Asp Asp Glu Lys Arg Asn Lys Asp Glu Lys Arg Asn Glu Asn Val Phe
          35             40             45

Phe Trp Lys Gly Val Ala Leu Gly Ser Gly Ala Glu Leu Arg Leu Phe
          50             55             60

Gly Val Asp Asp Arg Arg Ala Ala Asp Leu Val Asn Lys Val Leu Ala
          65             70             75             80

Glu Val Ala Arg Leu Glu Lys Met Phe Ser Leu Tyr Arg Glu Asp Ser
          85             90             95

Leu Ile Ser Arg Leu Asn Arg Asp Gly Tyr Leu Thr Ser Pro Pro Ala
          100            105            110

Asp Phe Leu Glu Leu Leu Ser Leu Ala Val Ile Phe Thr Arg
          115            120            125
```

<210> 1023
<211> 1203
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 1023

```
atgcgcgcgt tcctaccgat cgcagccata tgcgcgcgtc tcctgctgta cggattgacg 60
gcggcgaccg gcagcaccag ttcgctggcg gattatttct ggtggatagt ctcgttcagc 120
gcaatgctgc tgctggtgtt gtccgccgtt ttggcacgtt atgtcatatt gctgttgaaa 180
gacaggcgca acggcgtgtt cggttcgcag attgccaaac gcctttccgg gatgttcacg 240
ctggtcgccg tactgcccg cttgttcctg ttcggcattt ccgcgcagtt tatcaacggc 300
```

```

acgattaatt cgtgggttcgg caacgacacc cacgaagccc tcgaacgcag ccttaatttg 360
agcaagtccg cactggattt ggcggcagac aatgccgtca gcaacgccgt tcccgtacag 420
atagacctca tcggcaccgc ctccctgtcg ggcaatatgg gcagtgtgct ggaacactac 480
gccggcagcg gttttgccc gcttgccctg tacaatgccg caagcgggaa aatcgaaaaa 540
agcatcaatc cgcaccaatt cgaccagccg ctccccgaca aagaacattg ggaacagatt 600
cagcagaccg gttcgggttcg gagtttggaa agcataggcg gcgtattgta cgcgcaggga 660
tggttgtcgg caggtacgca caacggggcg gattacgcgc tgttcttccg ccagccgatt 720
cccgaaaatg tggcacagga tgccgttctg attgaaaagg cgcggggcgaa atatgccgaa 780
ttgagttaca gcaaaaaagg tttgcagacc ttttttctgg taaccctgct gattgcctcg 840
ctgctgtcga tttttcttgc gctggtaatg gcactgtatt ttgcccgccg tttcgtcgaa 900
cccattctgt cgcttgccga gggcgcaaag gcggtggcg agggtgattt cagccagacg 960
cgccccgtat tgcgcaacga cgagttcggg cgtttgacca agctgttcaa ccatatgacc 1020
gagcagcttt ccatcgccaa agaagcagac gaacgcaacc gccggcgcg ggaagccgcc 1080
cgtcactacc tcgagtgcggt gttggatggg ttgactaccg gtgtgggtgt ctcttaccct 1140
ctctcttgtt gccgtaccgc ggtgttttcc acttgctcatt cctccccctt ttcttatttc 1200
taa 1203

```

<210> 1024

<211> 400

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1024

```

Met Arg Arg Phe Leu Pro Ile Ala Ala Ile Cys Ala Val Val Leu Leu
 1             5             10            15

Tyr Gly Leu Thr Ala Ala Thr Gly Ser Thr Ser Ser Leu Ala Asp Tyr
      20             25             30

Phe Trp Trp Ile Val Ser Phe Ser Ala Met Leu Leu Leu Val Leu Ser
 35             40             45

Ala Val Leu Ala Arg Tyr Val Ile Leu Leu Leu Lys Asp Arg Arg Asn
 50             55             60

Gly Val Phe Gly Ser Gln Ile Ala Lys Arg Leu Ser Gly Met Phe Thr
 65             70             75             80

Leu Val Ala Val Leu Pro Gly Leu Phe Leu Phe Gly Ile Ser Ala Gln
      85             90             95

Phe Ile Asn Gly Thr Ile Asn Ser Trp Phe Gly Asn Asp Thr His Glu
 100            105            110

Ala Leu Glu Arg Ser Leu Asn Leu Ser Lys Ser Ala Leu Asp Leu Ala
 115            120            125

Ala Asp Asn Ala Val Ser Asn Ala Val Pro Val Gln Ile Asp Leu Ile
 130            135            140

Gly Thr Ala Ser Leu Ser Gly Asn Met Gly Ser Val Leu Glu His Tyr
 145            150            155            160

Ala Gly Ser Gly Phe Ala Gln Leu Ala Leu Tyr Asn Ala Ala Ser Gly
 165            170            175

```

Lys Ile Glu Lys Ser Ile Asn Pro His Gln Phe Asp Gln Pro Leu Pro
 180 185 190
 Asp Lys Glu His Trp Glu Gln Ile Gln Gln Thr Gly Ser Val Arg Ser
 195 200 205
 Leu Glu Ser Ile Gly Gly Val Leu Tyr Ala Gln Gly Trp Leu Ser Ala
 210 215 220
 Gly Thr His Asn Gly Arg Asp Tyr Ala Leu Phe Phe Arg Gln Pro Ile
 225 230 235 240
 Pro Glu Asn Val Ala Gln Asp Ala Val Leu Ile Glu Lys Ala Arg Ala
 245 250 255
 Lys Tyr Ala Glu Leu Ser Tyr Ser Lys Lys Gly Leu Gln Thr Phe Phe
 260 265 270
 Leu Val Thr Leu Leu Ile Ala Ser Leu Leu Ser Ile Phe Leu Ala Leu
 275 280 285
 Val Met Ala Leu Tyr Phe Ala Arg Arg Phe Val Glu Pro Ile Leu Ser
 290 295 300
 Leu Ala Glu Gly Ala Lys Ala Val Ala Gln Gly Asp Phe Ser Gln Thr
 305 310 315 320
 Arg Pro Val Leu Arg Asn Asp Glu Phe Gly Arg Leu Thr Lys Leu Phe
 325 330 335
 Asn His Met Thr Glu Gln Leu Ser Ile Ala Lys Glu Ala Asp Glu Arg
 340 345 350
 Asn Arg Arg Arg Glu Glu Ala Ala Arg His Tyr Leu Glu Cys Val Leu
 355 360 365
 Asp Gly Leu Thr Thr Gly Val Val Val Ser Tyr Pro Leu Ser Cys Cys
 370 375 380
 Arg Thr Ala Val Phe Ser Thr Cys His Ser Ser Pro Leu Ser Tyr Phe
 385 390 395 400

<210> 1025

<211> 1767

<212> DNA

<213> *Neisseria meningitidis*

<400> 1025

atgcgcccgtt ttctaccgat cgcagccata tgcgcccgtcg tcctgttgta cggactgacg 60
 gcggcaaccg gcagcaccag ttccgtggcg gattatcttct ggtggattgt tgcgttcagc 120
 gcaatgctgc tgctggtgtt gtccgcccgtt ttggcacggt atgtcatatt gctgttgaaa 180
 gacaggcgcg acggcgtatt cggttcgcag attgccaaac gcctttctgg gatgtttacg 240

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ctggttgccg tactgcccgg cgtgtttctg ttcggcggtt ccgcacagtt catcaacggc 300
acgattaatt cgtggttcgg caacgatacc cagcaggcgc ttgaacgcag cctcaatttg 360
agcaagtccg cattgaattt ggcggcagac aacgccctcg gcaacgccgt ccccggtgcag 420
atagacctca tcggcgcggc ttcctgccc ggggatatgg gcagggtgct ggaacattac 480
gccggcagcg gttttgcca gcttgccctg tacaatgccg caagcggcaa aatcgaaaaa 540
agcatcaacc cgcacaagct cgatcagccg tttccaggta aggcgcgttg ggaaaaaatc 600
caacggggcg gttcggtcag ggatttgga agcataggcg gcgtattgta cgcgcagggc 660
tggctgtcgg cgggtacgca caacggggcg gattacgcct tgtttttccg tcagccgggt 720
cccaaaggcg tggcagagga tgccgtctta atcgaaaagg caagggcgaa atatgctgag 780
ttgagttaca gcaaaaaagg tttgcagacc tttttcctgg caaccctgct gattgcctcg 840
ctgctgtcga tttttcttgc actggtcatg gcaactgtatt tcgcccggcg tttcgtcgaa 900
cccgtcctat cgcttgccga gggggcgaag gcggtggcgc aaggcgattt cagccagacg 960
cgccccgtgt tgcgcaacga cgagttcggc cgcttgacca agttgttcaa ccacatgacc 1020
gagcagcttt ccatcgccaa agaagcagac gagcgcaacc gccggcgcaa ggaagccgcc 1080
aggcattatc ttgaatgcgt gttggagggg ctgaccacgg gcgtggtggt gtttgacgaa 1140
caaggctgtc tgaaaacstt caacaaagcg gcggaacaga ttytggggat gccgcttacc 1200
cccctgtggg gcagcagccg gcacggttgg cacggcggtt cggcgagca gtccctgctt 1260
gccgaagtgt ttgccgccat cggcgcgcg gcaggtacgg acaaacccgt ccatgtgaaa 1320
tatgccgcgc cggacgatgc caaaatcctg ctgggcaagg caaccgtcct gcccgaaagc 1380
aacggcaacg gcgtggtaat ggtgattgac gacatcacgg ttttgataca cgcgcaaaaa 1440
gaagccgcgt ggggcgaagt ggcgaagcgg ctggcacacg aaatccgcaa tccgctcacg 1500
cccatccagc tttccgccga acggstggcg tkgaaattgg gcgggaagct ggatgagcag 1560
gatgcgcaaa tcctgacgcg ttcgaccgac accatcgtea aacaggtggc ggcattgaag 1620
gaaatggtcg aagcattccg caattatgcg cgttccctt cgctcaaatt ggaaaatcag 1680
gatttgaacg ccttaatcgg cgatgtgttg gcattgtatg aagccgggtc gtgccgggtt 1740
gcggcggtact tgccggcgaa ccgctga 1767

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<210> 1026

<211> 588

<212> PRT

<213> Neisseria meningitidis

<400> 1026

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Met Arg Arg Phe Leu Pro Ile Ala Ala Ile Cys Ala Val Val Leu Leu
 1              5              10              15

Tyr Gly Leu Thr Ala Ala Thr Gly Ser Thr Ser Ser Leu Ala Asp Tyr
      20              25              30

Phe Trp Trp Ile Val Ala Phe Ser Ala Met Leu Leu Leu Val Leu Ser
      35              40              45

Ala Val Leu Ala Arg Tyr Val Ile Leu Leu Leu Lys Asp Arg Arg Asp
      50              55              60

Gly Val Phe Gly Ser Gln Ile Ala Lys Arg Leu Ser Gly Met Phe Thr
      65              70              75              80

Leu Val Ala Val Leu Pro Gly Val Phe Leu Phe Gly Val Ser Ala Gln
      85              90              95

Phe Ile Asn Gly Thr Ile Asn Ser Trp Phe Gly Asn Asp Thr His Glu
      100             105             110

Ala Leu Glu Arg Ser Leu Asn Leu Ser Lys Ser Ala Leu Asn Leu Ala
      115             120             125

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Ala	Asp	Asn	Ala	Leu	Gly	Asn	Ala	Val	Pro	Val	Gln	Ile	Asp	Leu	Ile	130	135	140
Gly	Ala	Ala	Ser	Leu	Pro	Gly	Asp	Met	Gly	Arg	Val	Leu	Glu	His	Tyr	145	150	155
Ala	Gly	Ser	Gly	Phe	Ala	Gln	Leu	Ala	Leu	Tyr	Asn	Ala	Ala	Ser	Gly	165	170	175
Lys	Ile	Glu	Lys	Ser	Ile	Asn	Pro	His	Lys	Leu	Asp	Gln	Pro	Phe	Pro	180	185	190
Gly	Lys	Ala	Arg	Trp	Glu	Lys	Ile	Gln	Arg	Ala	Gly	Ser	Val	Arg	Asp	195	200	205
Leu	Glu	Ser	Ile	Gly	Gly	Val	Leu	Tyr	Ala	Gln	Gly	Trp	Leu	Ser	Ala	210	215	220
Gly	Thr	His	Asn	Gly	Arg	Asp	Tyr	Ala	Leu	Phe	Phe	Arg	Gln	Pro	Val	225	230	235
Pro	Lys	Gly	Val	Ala	Glu	Asp	Ala	Val	Leu	Ile	Glu	Lys	Ala	Arg	Ala	245	250	255
Lys	Tyr	Ala	Glu	Leu	Ser	Tyr	Ser	Lys	Lys	Gly	Leu	Gln	Thr	Phe	Phe	260	265	270
Leu	Ala	Thr	Leu	Leu	Ile	Ala	Ser	Leu	Leu	Ser	Ile	Phe	Leu	Ala	Leu	275	280	285
Val	Met	Ala	Leu	Tyr	Phe	Ala	Arg	Arg	Phe	Val	Glu	Pro	Val	Leu	Ser	290	295	300
Leu	Ala	Glu	Gly	Ala	Lys	Ala	Val	Ala	Gln	Gly	Asp	Phe	Ser	Gln	Thr	305	310	315
Arg	Pro	Val	Leu	Arg	Asn	Asp	Glu	Phe	Gly	Arg	Leu	Thr	Lys	Leu	Phe	325	330	335
Asn	His	Met	Thr	Glu	Gln	Leu	Ser	Ile	Ala	Lys	Glu	Ala	Asp	Glu	Arg	340	345	350
Asn	Arg	Arg	Arg	Glu	Glu	Ala	Ala	Arg	His	Tyr	Leu	Glu	Cys	Val	Leu	355	360	365
Glu	Gly	Leu	Thr	Thr	Gly	Val	Val	Val	Phe	Asp	Glu	Gln	Gly	Cys	Leu	370	375	380
Lys	Thr	Phe	Asn	Lys	Ala	Ala	Glu	Gln	Ile	Leu	Gly	Met	Pro	Leu	Thr	385	390	395
Pro	Leu	Trp	Gly	Ser	Ser	Arg	His	Gly	Trp	His	Gly	Val	Ser	Ala	Gln	405	410	415
Gln	Ser	Leu	Leu	Ala	Glu	Val	Phe	Ala	Ala	Ile	Gly	Ala	Ala	Ala	Gly	420	425	430

Thr Asp Lys Pro Val His Val Lys Tyr Ala Ala Pro Asp Asp Ala Lys
 435 440 445
 Ile Leu Leu Gly Lys Ala Thr Val Leu Pro Glu Asp Asn Gly Asn Gly
 450 455 460
 Val Val Met Val Ile Asp Asp Ile Thr Val Leu Ile His Ala Gln Lys
 465 470 475 480
 Glu Ala Ala Trp Gly Glu Val Ala Lys Arg Leu Ala His Glu Ile Arg
 485 490 495
 Asn Pro Leu Thr Pro Ile Gln Leu Ser Ala Glu Arg Xaa Ala Xaa Lys
 500 505 510
 Leu Gly Gly Lys Leu Asp Glu Gln Asp Ala Gln Ile Leu Thr Arg Ser
 515 520 525
 Thr Asp Thr Ile Val Lys Gln Val Ala Ala Leu Lys Glu Met Val Glu
 530 535 540
 Ala Phe Arg Asn Tyr Ala Arg Ser Pro Ser Leu Lys Leu Glu Asn Gln
 545 550 555 560
 Asp Leu Asn Ala Leu Ile Gly Asp Val Leu Ala Leu Tyr Glu Ala Gly
 565 570 575
 Pro Cys Arg Phe Ala Ala Asp Leu Pro Ala Asn Arg
 580 585

<210> 1027

<211> 2121

<212> DNA

<213> *Neisseria meningitidis*

<400> 1027

atgcgccgtt ttctaccgat cgcagccata tgcgccgtcg tcctggttgta cggactgacg 60
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 gcaatgctgc tgctggtggt gtccgccgtt ttggcaagtt atgtcatatt gctggttgaaa 180
 gacaggcgcg acggcggtatt cggttcgtag attgccaaac gcctttccgg gatgtttacg 240
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 acgattaatt cgtggttcgg caacgatacc cagcaggcgc ttgaacgcag cctcaatttg 360
 agcaagtccg cattgaatct ggcggcagac aacgcccttg gcaacgccat ccccgtagc 420
 atagacctca tcggcgccggc ttccctgccc ggggatattg gcagggtgct ggaacattac 480
 gccggcagcg gttttgccca gcttgccctg tacaatgccg caagcggcaa aatcgaaaaa 540
 agcatcaacc cgcacaagct cgatcagccg tttccaggta aggcgcggtt ggaaaaaatc 600
 caacaggcgg gttcggtcag ggatttgga agcataggcg gcgtattgta cgcgcagggc 660
 tggctgtcgg caggtagcga caacgggcgc gattacgcct tgtttttccg tcagccggtt 720
 cccaaaggcg tggcagagga tgccgtctta atcgaaaagg caagggcgaa atatgctgag 780
 ttgagttaca gcaaaaaagg tttgcagacc tttttcctgg caaccctgct gattgcctcg 840
 ctgctgtcga tttttcttgc actggtcatg gcactgtatt tcgcccgcgg tttcgtcgaa 900
 cccgtcctat cgcttgccga gggggcgaag gcggtggcgc aaggcgattt cagccagacg 960
 cgccccgtgt tgcgcaacga cgagttcgga cgcttgacca agttgttcaa ccacatgacc 1020
 gagcagcttt ccacgcgcaa agaagcagac gagcgcaacc gccggcgaga ggaagccgcc 1080
 agacattatc tcgaatgcgt gttggagggg ctgaccacgg gcgtggtggt gtttgacgaa 1140

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caaggctgtc tgaaaacctt caacaaagcg gcggaacaga ttttggggat gccgcttacc 1200
cccctgtggg gcagcagccg gcacggttgg cacggcgttt cggcgcagca gtccctgctt 1260
gccgaagtgt ttgccgccat cggcgcggcg gcaggtacgg acaaaccggt ccatgtgaaa 1320
tatgccgcgc cggacgatgc caaaatcctg ctgggcaagg caaccgtcct gcccgagac 1380
aacggcaacg gcgtggtaat ggtgattgac gacatcaccg ttttgataca cgcgcaaaaa 1440
gaagccgcgt ggggcgaagt ggcaaaacgg ctggcacacg aaatccgcaa tccgctcacg 1500
cccatccagc tttctgccga acggctggcg tggaaattgg gcgggaagct ggacgagcag 1560
gacgcgcaaa tcctgacacg ttcgaccgac accatcatca aacaagtggc ggcatataaa 1620
gaaatggtcg aggcattccg caattacgcg cgttccctt cgctcaaatt ggaaaatcag 1680
gatttgaacg ccttaatcgg cgatgtgttg gcattgtacg aagctggtcc gtgccggtt 1740
gcggcggaac ttgccggcga accgctgatg atggcggcgg atacgaccgc catgcggcag 1800
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gtcagggtaa aatcggaagc ggggcaggac ggacggattg tcctgacagt ttgcgacaa 1920
ggcaaggggt tcggcaggga aatgctgcac aatgccttcg agccgtatgt aacggacaaa 1980
ccggctggaa cgggattggg actgcccggt gtgaaaaaaa tcattgaaga acacggcggc 2040
cgcatcagcc tgagcaatca ggatgcgggc gcgcgctgtg tcagaatcat cttgccaaaa 2100
acggtagaaa cttatgcgta g 2121

```

<210> 1028

<211> 706

<212> PRT

<213> Neisseria meningitidis

<400> 1028

```

Met Arg Arg Phe Leu Pro Ile Ala Ala Ile Cys Ala Val Val Leu Leu
 1             5             10             15

```

```

Tyr Gly Leu Thr Ala Ala Thr Gly Ser Thr Ser Ser Leu Ala Asp Tyr
      20             25             30

```

```

Phe Trp Trp Ile Val Ala Phe Ser Ala Met Leu Leu Leu Val Leu Ser
 35             40             45

```

```

Ala Val Leu Ala Arg Tyr Val Ile Leu Leu Leu Lys Asp Arg Arg Asp
 50             55             60

```

```

Gly Val Phe Gly Ser Gln Ile Ala Lys Arg Leu Ser Gly Met Phe Thr
 65             70             75             80

```

```

Leu Val Ala Val Leu Pro Gly Val Phe Leu Phe Gly Val Ser Ala Gln
      85             90             95

```

```

Phe Ile Asn Gly Thr Ile Asn Ser Trp Phe Gly Asn Asp Thr His Glu
 100            105            110

```

```

Ala Leu Glu Arg Ser Leu Asn Leu Ser Lys Ser Ala Leu Asn Leu Ala
 115            120            125

```

```

Ala Asp Asn Ala Leu Gly Asn Ala Ile Pro Val Gln Ile Asp Leu Ile
 130            135            140

```

```

Gly Ala Ala Ser Leu Pro Gly Asp Met Gly Arg Val Leu Glu His Tyr
 145            150            155            160

```

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Ala Gly Ser Gly Phe Ala Gln Leu Ala Leu Tyr Asn Ala Ala Ser Gly
      165            170            175

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Lys	Ile	Glu	Lys	Ser	Ile	Asn	Pro	His	Lys	Leu	Asp	Gln	Pro	Phe	Pro	
			180				185						190			
Gly	Lys	Ala	Arg	Trp	Glu	Lys	Ile	Gln	Gln	Ala	Gly	Ser	Val	Arg	Asp	
		195					200					205				
Leu	Glu	Ser	Ile	Gly	Gly	Val	Leu	Tyr	Ala	Gln	Gly	Trp	Leu	Ser	Ala	
		210			215						220					
Gly	Thr	His	Asn	Gly	Arg	Asp	Tyr	Ala	Leu	Phe	Phe	Arg	Gln	Pro	Val	
225				230						235	240					
Pro	Lys	Gly	Val	Ala	Glu	Asp	Ala	Val	Leu	Ile	Glu	Lys	Ala	Arg	Ala	
			245				250						255			
Lys	Tyr	Ala	Glu	Leu	Ser	Tyr	Ser	Lys	Lys	Gly	Leu	Gln	Thr	Phe	Phe	
			260					265					270			
Leu	Ala	Thr	Leu	Leu	Ile	Ala	Ser	Leu	Leu	Ser	Ile	Phe	Leu	Ala	Leu	
		275					280					285				
Val	Met	Ala	Leu	Tyr	Phe	Ala	Arg	Arg	Phe	Val	Glu	Pro	Val	Leu	Ser	
290						295					300					
Leu	Ala	Glu	Gly	Ala	Lys	Ala	Val	Ala	Gln	Gly	Asp	Phe	Ser	Gln	Thr	
305				310						315	320					
Arg	Pro	Val	Leu	Arg	Asn	Asp	Glu	Phe	Gly	Arg	Leu	Thr	Lys	Leu	Phe	
			325					330						335		
Asn	His	Met	Thr	Glu	Gln	Leu	Ser	Ile	Ala	Lys	Glu	Ala	Asp	Glu	Arg	
			340					345					350			
Asn	Arg	Arg	Arg	Glu	Glu	Ala	Ala	Arg	His	Tyr	Leu	Glu	Cys	Val	Leu	
		355			360						365					
Glu	Gly	Leu	Thr	Thr	Gly	Val	Val	Val	Phe	Asp	Glu	Gln	Gly	Cys	Leu	
370				375						380	385					
Lys	Thr	Phe	Asn	Lys	Ala	Ala	Glu	Gln	Ile	Leu	Gly	Met	Pro	Leu	Thr	
385				390						395	400					
Pro	Leu	Trp	Gly	Ser	Ser	Arg	His	Gly	Trp	His	Gly	Val	Ser	Ala	Gln	
			405					410						415		
Gln	Ser	Leu	Leu	Ala	Glu	Val	Phe	Ala	Ala	Ile	Gly	Ala	Ala	Ala	Gly	
			420			425						430				
Thr	Asp	Lys	Pro	Val	His	Val	Lys	Tyr	Ala	Ala	Pro	Asp	Asp	Ala	Lys	
		435					440					445				
Ile	Leu	Leu	Gly	Lys	Ala	Thr	Val	Leu	Pro	Glu	Asp	Asn	Gly	Asn	Gly	
450				455						460	465					
Val	Val	Met	Val	Ile	Asp	Asp	Ile	Thr	Val	Leu	Ile	His	Ala	Gln	Lys	
465				470						475	480					

Glu Ala Ala Trp Gly Glu Val Ala Lys Arg Leu Ala His Glu Ile Arg
485 490 495

Asn Pro Leu Thr Pro Ile Gln Leu Ser Ala Glu Arg Leu Ala Trp Lys
500 505 510

Leu Gly Gly Lys Leu Asp Glu Gln Asp Ala Gln Ile Leu Thr Arg Ser
515 520 525

Thr Asp Thr Ile Ile Lys Gln Val Ala Ala Leu Lys Glu Met Val Glu
530 535 540

Ala Phe Arg Asn Tyr Ala Arg Ser Pro Ser Leu Lys Leu Glu Asn Gln
545 550 555 560

Asp Leu Asn Ala Leu Ile Gly Asp Val Leu Ala Leu Tyr Glu Ala Gly
565 570 575

Pro Cys Arg Phe Ala Ala Glu Leu Ala Gly Glu Pro Leu Met Met Ala
580 585 590

Ala Asp Thr Thr Ala Met Arg Gln Val Leu His Asn Ile Phe Lys Asn
595 600 605

Ala Ala Glu Ala Ala Glu Glu Ala Asp Val Pro Glu Val Arg Val Lys
610 615 620

Ser Glu Ala Gly Gln Asp Gly Arg Ile Val Leu Thr Val Cys Asp Asn
625 630 635 640

Gly Lys Gly Phe Gly Arg Glu Met Leu His Asn Ala Phe Glu Pro Tyr
645 650 655

Val Thr Asp Lys Pro Ala Gly Thr Gly Leu Gly Leu Pro Val Val Lys
660 665 670

Lys Ile Ile Glu Glu His Gly Gly Arg Ile Ser Leu Ser Asn Gln Asp
675 680 685

Ala Gly Gly Ala Cys Val Arg Ile Ile Leu Pro Lys Thr Val Glu Thr
690 695 700

Tyr Ala
705

<210> 1029

<211> 651

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1029

atgatgatgc acgcttctgt ccaaagtcgt ttgcgaccga tactttatgt tttgattttc 60
tttgccggtt ttttgaccgc gcaaattctgg ttcaatcaga aagcctatac tgaagagctg 120
cctccgcttc tgtccgcatt gtccgccgtc gcgctggtgt ggctggcgtg ggcgttcgtg 180
tcggtgctgt caaaggctaa ggcagaaaag ttctaccgcg aaaaaatgat acagaacgaa 240

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agcatacacc ccgtcctgca cgcttctttg caacacttgg aacacaagcc gcaaattgctc 300
gccctgctgg tcaaaaacca cggcaaaggc atggcggaac aggtcagggt caaggcgga 360
gtgctgcccg acgacgaaga cgcgcgcacg attgccgccg agttggcaaa aatggatatg 420
ttcgatttgg ggacggacgc ggtcgctcgc ggcgaaacct atgggcgcgt gttcgccgat 480
attttcgagt tgtcggcggc tttggaaagg cgcgcgttca aaggatact gaaactgacg 540
gcggaatata aaaaacatct tcggcgatgc ctgccgttcg gaaacggcgt tggatttggg 600
cgcgctcaat caggcggtga gggaaatctc gaaaacgccg gaaaagccta a 651

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<210> 1030

<211> 216

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1030

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Met Met Met His Ala Ser Val Gln Ser Arg Phe Ala Pro Ile Leu Tyr
 1          5          10          15

Val Leu Ile Phe Phe Ala Gly Phe Leu Thr Ala Gln Ile Trp Phe Asn
          20          25          30

Gln Lys Ala Tyr Thr Glu Glu Leu Pro Pro Leu Leu Ser Ala Leu Ser
          35          40          45

Ala Val Ala Leu Val Trp Leu Ala Trp Ala Phe Val Ser Val Arg Ser
          50          55          60

Lys Ala Lys Ala Glu Lys Phe Tyr Arg Glu Lys Met Ile Gln Asn Glu
          65          70          75          80

Ser Ile His Pro Val Leu His Ala Ser Leu Gln His Leu Glu His Lys
          85          90          95

Pro Gln Met Leu Ala Leu Leu Val Lys Asn His Gly Lys Gly Met Ala
          100          105          110

Glu Gln Val Arg Phe Lys Ala Glu Val Leu Pro Asp Asp Glu Asp Ala
          115          120          125

Arg Thr Ile Ala Ala Glu Leu Ala Lys Met Asp Met Phe Ala Leu Gly
          130          135          140

Thr Asp Ala Val Ala Ser Gly Glu Thr Tyr Gly Arg Val Phe Ala Asp
          145          150          155          160

Ile Phe Glu Leu Ser Ala Ala Leu Glu Arg Arg Ala Phe Lys Gly Ile
          165          170          175

Leu Lys Leu Thr Ala Glu Tyr Lys Lys His Leu Arg Arg Cys Leu Pro
          180          185          190

Phe Gly Asn Gly Val Gly Phe Gly Arg Ala Gln Ser Gly Val Glu Gly
          195          200          205

Asn Leu Glu Asn Ala Gly Lys Ala
          210          215

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<210> 1031
 <211> 641
 <212> DNA
 <213> Neisseria meningitidis

<400> 1031
 atgatgatgc acgcttctgt ccaaagccgt ttcgcaccga tactttatgt tttgattttc 60
 tttgccggtt ttttgaccgc gcaaactctgg ttcaatcaga aagcctatac tgaagagctg 120
 cctccgcttc tgtccgcatt gtccgccgtc gcgctggtgt ggctggcgtg ggcgttcgtg 180
 tcggcgcggtt caaaggccaa ggcggaagaa ttctaccgcg aaaaaatgat acagaacgaa 240
 agcatacacc ccgtcstgca cgcctctttg caacacttgg aacacaagcc gcaaatactc 300
 gccctgctgg tcaaaaacca cggcaaaggg atggcggaac aggtcagggt caaggcggaa 360
 gtgctgcccg acgacgaaga cgcgcgcacg attgccgccg agttggcaaa aatggatatg 420
 ttcgcattgg ggaackgacgc ggtcgcctcg ggcgaaacct atggacgcgt gttcgccgat 480
 attttcgagt tgcggmggc tttggaaggg cgcgcgttca aaggaatgtt gaaactgacg 540
 gcggaatata aaaacatctt cggmgatgcc tgccgttcgg aaacggcggt ggagttgggc 600
 gcactcaatc aggcgttgca ggagatttca aaaacatccg g 641

<210> 1032
 <211> 214
 <212> PRT
 <213> Neisseria meningitidis

<400> 1032
 Met Met Met His Ala Ser Val Gln Ser Arg Phe Ala Pro Ile Leu Tyr
 1 5 10 15
 Val Leu Ile Phe Phe Ala Gly Phe Leu Thr Ala Gln Ile Trp Phe Asn
 20 25 30
 Gln Lys Ala Tyr Thr Glu Glu Leu Pro Pro Leu Leu Ser Ala Leu Ser
 35 40 45
 Ala Val Ala Leu Val Trp Leu Ala Trp Ala Phe Val Ser Ala Arg Ser
 50 55 60
 Lys Ala Lys Ala Glu Lys Phe Tyr Arg Glu Lys Met Ile Gln Asn Glu
 65 70 75 80
 Ser Ile His Pro Val Xaa His Ala Ser Leu Gln His Leu Glu His Lys
 85 90 95
 Pro Gln Ile Leu Ala Leu Leu Val Lys Asn His Gly Lys Gly Met Ala
 100 105 110
 Glu Gln Val Arg Phe Lys Ala Glu Val Leu Pro Asp Asp Glu Asp Ala
 115 120 125
 Arg Thr Ile Ala Ala Glu Leu Ala Lys Met Asp Met Phe Ala Leu Gly
 130 135 140
 Thr Asp Ala Val Ala Ser Gly Glu Thr Tyr Gly Arg Val Phe Ala Asp
 145 150 155 160

Ile Phe Glu Leu Ser Xaa Ala Leu Glu Gly Arg Ala Phe Lys Gly Met
165 170 175

Leu Lys Leu Thr Ala Glu Tyr Lys Xaa His Leu Arg Arg Cys Leu Pro
180 185 190

Phe Gly Asn Gly Val Gly Val Gly Arg Thr Gln Ser Gly Val Ala Gly
195 200 205

Asp Phe Lys Asn Ile Arg
210

<210> 1033
<211> 650
<212> DNA
<213> Neisseria meningitidis

<400> 1033
atgatgatgc acgcttctgt ccaaagccgt ttgcaccga tactttatgt tttgattttc 60
tttgccggtt ttttgaccgc gcaaactctgg ttcaatcaga aagcctatac tgaagagctg 120
cctccgcttc tgtccgcatt gtccgccgtc gcgctgggtg ggctggcgtg ggcgttcgtg 180
tcggcgcggtt caaaggctaa ggcggaaaag ttctaccgcg aaaaaatgat acagaacgaa 240
agcatacacc ccgtcctgca cgcttctttg caacacttgg aacacaagcc gcaaattgctc 300
gccctgctgg tcaaaaacca cggcaaaggg atggcggaac aggtcaggtt caaggcggaa 360
gtgctgcccg acgacgaaga cgcgcgcacg attgccgcg agttggcaaa aatggatatg 420
tttgcatggg ggacggacgc ggtcgctcgc ggcgaaacct atggacgcgt gttcgccgat 480
atthtcgagt tgcggcggc tttggaaggc cgcgcgttca aaggaatgtt gaaactgacg 540
gcggaatata aaaacatctt cggcgatgcc tgccgttcgg aaacggcggtt ggagttgggc 600
gcgctcaatc aggcgttgca ggagatttca aaaacatcgg aaaagtccaa 650

<210> 1034
<211> 217
<212> PRT
<213> Neisseria meningitidis

<400> 1034
Met Met Met His Ala Ser Val Gln Ser Arg Phe Ala Pro Ile Leu Tyr
1 5 10 15

Val Leu Ile Phe Phe Ala Gly Phe Leu Thr Ala Gln Ile Trp Phe Asn
20 25 30

Gln Lys Ala Tyr Thr Glu Glu Leu Pro Pro Leu Leu Ser Ala Leu Ser
35 40 45

Ala Val Ala Leu Val Trp Leu Ala Trp Ala Phe Val Ser Ala Arg Ser
50 55 60

Lys Ala Lys Ala Glu Lys Phe Tyr Arg Glu Lys Met Ile Gln Asn Glu
65 70 75 80

Ser Ile His Pro Val Leu His Ala Ser Leu Gln His Leu Glu His Lys
85 90 95

Pro Gln Met Leu Ala Leu Leu Val Lys Asn His Gly Lys Gly Met Ala
100 105 110

Glu Gln Val Arg Phe Lys Ala Glu Val Leu Pro Asp Asp Glu Asp Ala
115 120 125

Arg Thr Ile Ala Ala Glu Leu Ala Lys Met Asp Met Phe Ala Leu Gly
130 135 140

Thr Asp Ala Val Ala Ser Gly Glu Thr Tyr Gly Arg Val Phe Ala Asp
145 150 155 160

Ile Phe Glu Leu Ser Ala Ala Leu Glu Gly Arg Ala Phe Lys Gly Met
165 170 175

Leu Lys Leu Thr Ala Glu Tyr Lys Xaa His Leu Arg Arg Cys Leu Pro
180 185 190

Phe Gly Asn Gly Val Gly Val Gly Arg Ala Gln Ser Gly Val Ala Gly
195 200 205

Asp Phe Lys Asn Ile Gly Lys Val Gln
210 215

<210> 1035
<211> 507
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1035
atgatgatgc acgcttctgt ccaaagtcgt ttgcaccga tactttatgt tttgattttc 60
tttgccggtt ttttgaccgc gcaaactctgg ttcaatcaga aagcctatac tgaagagctg 120
cctccgcttc tgtccgcatt gtccgccgtc gcgctgggtg ggctggcgtg ggcgttcgtg 180
tcggtgctgt caaaggctaa ggcagaaaag ttctaccgcg aaaaaatgat acagaacgaa 240
agcatacacc ccgtcctgca cgcttctttg caacacttgg aacacaagcc gcaaatgctc 300
gccctgctgg tcaaaaacca cggcaaaggc atggcggaac aggtcaggtt caaggcggaa 360
gtgctgcccg acgacgaaga cgcgcgcacg attgccgccg agttggcaaa aatggatatg 420
ttcgcattgg ggacggacgc gtcgcctcg ggcgaaacct atgggcgcgt gttcgccgat 480
attttcgagt tgtcggcggc tttggaa 507

<210> 1036
<211> 169
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1036
Met Met Met His Ala Ser Val Gln Ser Arg Phe Ala Pro Ile Leu Tyr
1 5 10 15

Val Leu Ile Phe Phe Ala Gly Phe Leu Thr Ala Gln Ile Trp Phe Asn
20 25 30

Gln Lys Ala Tyr Thr Glu Glu Leu Pro Pro Leu Leu Ser Ala Leu Ser
35 40 45

Ala Val Ala Leu Val Trp Leu Ala Trp Ala Phe Val Ser Val Arg Ser
50 55 60

Lys Ala Lys Ala Glu Lys Phe Tyr Arg Glu Lys Met Ile Gln Asn Glu
65 70 75 80

Ser Ile His Pro Val Leu His Ala Ser Leu Gln His Leu Glu His Lys
85 90 95

Pro Gln Met Leu Ala Leu Leu Val Lys Asn His Gly Lys Gly Met Ala
100 105 110

Glu Gln Val Arg Phe Lys Ala Glu Val Leu Pro Asp Asp Glu Asp Ala
115 120 125

Arg Thr Ile Ala Ala Glu Leu Ala Lys Met Asp Met Phe Ala Leu Gly
130 135 140

Thr Asp Ala Val Ala Ser Gly Glu Thr Tyr Gly Arg Val Phe Ala Asp
145 150 155 160

Ile Phe Glu Leu Ser Ala Ala Leu Glu
165

<210> 1037
<211> 666
<212> DNA
<213> Neisseria meningitidis

<400> 1037
atgatgatgc acgcttctgt ccaaagccgt ttgcgaccga tactttatgt tttgattttc 60
tttgccgggtt ttttgaccgc gcaaatctgg ttcaatcaga aagcctatac tgaagagctg 120
cctccgcttc tgtccgcatt gtccgcccgtc gcgctggtgt ggctggcgtg ggcgttcgtg 180
tcggcgcggtt caaaggccaa ggcggaagaa ttctaccgcg aaaaaatgat acagaacgaa 240
agcatacacc ccgtcctgca cgctcttttg caacacttgg aacacaagcc gcaaatactc 300
gccctgctgg tcaaaaacca cggcaaaggg atggcggaac aggtcagggt caaggcggaa 360
gtgctgcccg acgacgaaga cgcgcgcacg attgccgccg agttggcaaa aatggatatg 420
ttcgcatagg ggacggacgc ggtcgcctcg ggcgaaacct atggacgcgt gttcgccgat 480
attttcgagt tgtcggcggc tttggaaggg cgcgcgttca aaggaatgtt gaaactgacg 540
gcggaatata aaaacatctt cggcgatgcc tgccgttcgg aaacggcggt ggagttgggc 600
gcactcaatc aggcgttgca ggagatttca aaaacatcgg aaaagtccaa acggatatatt 660
tattga 666

<210> 1038
<211> 221
<212> PRT
<213> Neisseria meningitidis

<400> 1038
Met Met Met His Ala Ser Val Gln Ser Arg Phe Ala Pro Ile Leu Tyr
1 5 10 15

Val Leu Ile Phe Phe Ala Gly Phe Leu Thr Ala Gln Ile Trp Phe Asn
20 25 30

<210> 1040
 <211> 221
 <212> PRT
 <213> Neisseria meningitidis

<400> 1040
 Met Met Met His Ala Ser Val Gln Ser Arg Phe Ala Pro Ile Leu Tyr
 1 5 10 15
 Val Leu Ile Phe Phe Ala Gly Phe Leu Thr Ala Gln Ile Trp Phe Asn
 20 25 30
 Gln Lys Ala Tyr Thr Glu Glu Leu Pro Pro Leu Leu Ser Ala Leu Ser
 35 40 45
 Ala Val Ala Leu Val Trp Leu Ala Trp Ala Phe Val Ser Ala Arg Ser
 50 55 60
 Lys Ala Lys Ala Glu Lys Phe Tyr Arg Glu Lys Met Ile Gln Asn Glu
 65 70 75 80
 Ser Ile His Pro Val Leu His Ala Ser Leu Gln His Leu Glu His Lys
 85 90 95
 Pro Gln Met Leu Ala Leu Leu Val Lys Asn His Gly Lys Gly Met Ala
 100 105 110
 Glu Gln Val Arg Phe Lys Ala Glu Val Leu Pro Asp Asp Glu Asp Ala
 115 120 125
 Arg Thr Ile Ala Ala Glu Leu Ala Lys Met Asp Met Phe Ala Leu Gly
 130 135 140
 Thr Asp Ala Val Ala Ser Gly Glu Thr Tyr Gly Arg Val Phe Ala Asp
 145 150 155 160
 Ile Phe Glu Leu Ser Ala Ala Leu Glu Gly Arg Ala Phe Lys Gly Met
 165 170 175
 Leu Lys Leu Thr Ala Glu Tyr Lys Asn Ile Phe Gly Asp Ala Cys Arg
 180 185 190
 Ser Glu Thr Ala Leu Glu Leu Gly Ala Leu Asn Gln Ala Leu Gln Glu
 195 200 205
 Ile Ser Lys Thr Ser Glu Lys Ser Lys Arg Ile Phe Tyr
 210 215 220

<210> 1041
 <211> 582
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1041
 atggggtgcgg gtgtagtatt cgttgtcttt cagccgttct tcagcctggt tcgagcggttg 60
 ttcgagggcg gagtcggtat agtcgagggg ggcgcacgatg ccgctgaatg cgacttcttg 120


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tccgaggaat ttaccggtat ccggatcggt gatgttttta ttgattcggt aggtcagata 180
acggcccggg tctttcaggc ctttggtgta aaccctggcg cctttggtgt acagcagcct 240
gccttccggg cccgagagca ggcgcggcgc ggcagcggtt tctttgcggg aaacgatttg 300
cggggtgctgc ataaagacgc ggtagaagtt gacatcgatg gcgggaatac cgtatccgga 360
cacttcctta tccggaactga ttttgacgac ggggatgccg tctgtctgtt ccaagccgag 420
gcgcggttcg ccgccaacgt agcgcaacac caatacctgg cccggataaa tcaggtcggg 480
attgtggatt tgatcccggt tcgcgccccca caggggggga ccattgccac gggctgtaca 540
ggtatttgcc cgaaataccc cacagggtgt cgccctgttt ga 582

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<210> 1042

<211> 193

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1042

```

Met Gly Ala Gly Val Val Phe Val Val Phe Gln Pro Phe Phe Ser Leu
  1             5             10             15

```

```

Phe Arg Ala Leu Phe Glu Gly Gly Val Gly Ile Val Glu Gly Ala His
      20             25             30

```

```

Asp Ala Ala Glu Cys Asp Phe Leu Ser Glu Glu Phe Thr Arg Ile Arg
      35             40             45

```

```

Ile Gly Asp Val Phe Ile Asp Ser Val Gly Gln Ile Thr Ala Arg Phe
      50             55             60

```

```

Phe Gln Ala Phe Gly Val Asn Pro Gly Ala Phe Gly Val Gln Gln Pro
      65             70             75             80

```

```

Ala Phe Arg Ala Arg Glu Gln Ala Arg Arg Gly Ser Gly Phe Phe Ala
      85             90             95

```

```

Gly Asn Asp Leu Arg Val Leu His Lys Asp Ala Val Glu Val Asp Ile
      100            105            110

```

```

Asp Gly Gly Asn Thr Val Ser Gly His Phe Leu Ile Arg Thr Asp Phe
      115            120            125

```

```

Asp Asp Gly Asp Ala Val Cys Leu Phe Gln Ala Glu Ala Arg Phe Ala
      130            135            140

```

```

Ala Asn Val Ala Gln His Gln Tyr Leu Ala Arg Ile Asn Gln Val Gly
      145            150            155            160

```

```

Ile Val Asp Leu Ile Pro Val Arg Ala Pro Gln Gly Gly Thr Ile Ala
      165            170            175

```

```

Thr Gly Cys Thr Gly Ile Cys Pro Lys Tyr Pro Thr Gly Cys Arg Pro
      180            185            190

```

Val

<210> 1043

<211> 513
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 1043
 atgggtgcgg gtatggtatt cgttgtcttt cggccggttct ccagcctggt tcgagcggtg 60
 ttcgaggaca gagtcggtat agtcgagggg ggcgacgatg ccgctgaatg cgacttcctg 120
 cccgaggaat ttaccctgat ccggatcggg gatgttttta ttgattcggg aggtcaggta 180
 gcggcccggc tctttcaggc ctttggtgta aaccctgggt cctttggtgt acagcagcct 240
 gccttccggg cccgagwrca sgcgcggygc ggcagcggtt tctttgcggg aaacgatttg 300
 cggatgccgc ataaagatgc ggtagaagt gacatcgatg gcgggaatac cgtatccgga 360
 cacttcctta tccggactca ttttgacgac ggggatgccg tctgtctggt ccaagccgag 420
 gcgcggttcg ccgtcaacgt ggcgcaacac caatacctgg tccggataaa tcaggtcggg 480
 attgtggatt tgatcccggg tcgcgtycca cag 513

<210> 1044
 <211> 171
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 1044
 Met Gly Ala Gly Met Val Phe Val Val Phe Arg Pro Phe Ser Ser Leu
 1 5 10 15
 Phe Arg Ala Leu Phe Glu Asp Arg Val Gly Ile Val Glu Gly Ala His
 20 25 30
 Asp Ala Ala Glu Cys Asp Phe Leu Pro Glu Glu Phe Thr Arg Ile Arg
 35 40 45
 Ile Gly Asp Val Phe Ile Asp Ser Val Gly Gln Val Ala Ala Arg Leu
 50 55 60
 Phe Gln Ala Phe Gly Val Asn Pro Gly Ala Phe Gly Val Gln Gln Pro
 65 70 75 80
 Ala Phe Arg Ala Arg Xaa Xaa Ala Arg Xaa Gly Ser Gly Phe Phe Ala
 85 90 95
 Gly Asn Asp Leu Arg Met Pro His Lys Asp Ala Val Glu Val Asp Ile
 100 105 110
 Asp Gly Gly Asn Thr Val Ser Gly His Phe Leu Ile Arg Thr His Phe
 115 120 125
 Asp Asp Gly Asp Ala Val Cys Leu Phe Gln Ala Glu Ala Arg Phe Ala
 130 135 140
 Val Asn Val Ala Gln His Gln Tyr Leu Val Arg Ile Asn Gln Val Gly
 145 150 155 160
 Ile Val Asp Leu Ile Pro Val Arg Val Pro Gln
 165 170

<210> 1045

<211> 581
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 1045
 atgggtgcgg gtatgggtatt cgttgtcttt cggccgttct ccagcctggt tcgagcgttg 60
 ttcgaggaca gagtcggtat agtcgaggga gcgcacgatg ccgctgaatg cgacttcctg 120
 cccgaggaat ttaccogtat ccggatcggg gatgttttta ttgattcggg aggtcaggta 180
 gcggccccgc tctttcaggc ctttggtgta aaccctggtg cctttggtgt acagcagcct 240
 gccttcgggg cccgagagca ggcgcggcgc gccagcgggt tctttgcggg aaacgatttg 300
 cgggtgccc ataaagatgc ggtagaagtt gacatcgatg gcggaatac cgtatccgga 360
 cacttcctta tccggactca ttttgacgac ggggatgccg tctgtctggt ccaagccgag 420
 gcgcgggttc ccgtaacgt ggcgcaacac caatacctgg tccagataaa tcaggtcggg 480
 attgtggatt tgatcccggt tcggtccca caggcgcccc cattgccacg ggctgtacag 540
 gtatttgccc gaaatgcccc acagggtgtc gccctgtttg a 581

<210> 1046
 <211> 193
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 1046
 Met Gly Ala Gly Met Val Phe Val Val Phe Arg Pro Phe Ser Ser Leu
 1 5 10 15
 Phe Arg Ala Leu Phe Glu Asp Arg Val Gly Ile Val Glu Gly Ala His
 20 25 30
 Asp Ala Ala Glu Cys Asp Phe Leu Pro Glu Glu Phe Thr Arg Ile Arg
 35 40 45
 Ile Gly Asp Val Phe Ile Asp Ser Val Gly Gln Val Ala Ala Arg Leu
 50 55 60
 Phe Gln Ala Phe Gly Val Asn Pro Gly Ala Phe Gly Val Gln Gln Pro
 65 70 75 80
 Ala Phe Arg Ala Arg Glu Gln Ala Arg Arg Gly Ser Gly Phe Phe Ala
 85 90 95
 Gly Asn Asp Leu Arg Val Pro His Lys Asp Ala Val Glu Val Asp Ile
 100 105 110
 Asp Gly Gly Asn Thr Val Ser Gly His Phe Leu Ile Arg Thr His Phe
 115 120 125
 Asp Asp Gly Asp Ala Val Cys Leu Phe Gln Ala Glu Ala Arg Phe Ala
 130 135 140
 Val Asn Val Ala Gln His Gln Tyr Leu Val Gln Ile Asn Gln Val Gly
 145 150 155 160
 Ile Val Asp Leu Ile Pro Val Arg Val Pro Gln Ala Ala Xaa Ile Ala
 165 170 175
 Thr Gly Cys Thr Gly Ile Cys Pro Lys Cys Pro Thr Gly Cys Arg Pro

Val

<210> 1047

<211> 714

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1047

```

atggagcttg ggcataatcgt attccttgtg ctttgcgcg cgttcagacgg cctttttact 60
ttccagacat tccgccagcc cgcgttcgcg caagatacag ctcgggcatt cgcggcagcc 120
gccgacgata cccttgtagc aggtgtgggt ctgttcgcg atgtagtcca acacgcccac 180
ttcgtccgcc aacgcccacg tttgcgcctt ggtcaggtag atcagcggcg tgtggatttg 240
aaaatcgtag tccatcgcca gattaagggt aacgttcatg gatttgacga acacgcgcgc 300
gcagtcggga tagcccgaaa aatcgggttc gcacacgccc gcgatgatgt gccggatacc 360
ctgccctttg gcaaaaatgg cggcgtaaa caggaaaagc gcgttacgcc cgtccacaaa 420
ggtattggga acgcccgttg cggcggtttc gatggcgcg gtttcgatgg cggcggtttc 480
gtccatcagg gcgttgtgcg taatctgccg catcaggctc aaatcgagta cggtttgact 540
gacacccaaa tcctgcgcga tccactctgc gcgttccagc tcgacggcat ggcgttgccc 600
gtatcggaag gtgatggctt ggacgttttc gcgcccgtag gtttggattg cctgaatcag 660
gcaggtggtc gaatcctgac cgcccgagaa gatgaccaag gctttttggt ttga 714

```

<210> 1048

<211> 237

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1048

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Met Glu Leu Gly His Ile Val Phe Leu Val Leu Cys Ala Arg Ser Asp
  1             5             10             15

Gly Leu Phe Thr Phe Gln Thr Phe Arg Gln Pro Ala Phe Ala Gln Asp
      20             25             30

Thr Ala Arg Ala Phe Ala Ala Ala Ala Asp Asp Thr Leu Val Ala Gly
      35             40             45

Val Gly Leu Phe Ala Asp Val Val Gln His Ala His Phe Val Arg Gln
      50             55             60

Arg Pro Arg Leu Arg Leu Gly Gln Val His Gln Arg Arg Val Asp Leu
      65             70             75             80

Lys Ile Val Val His Arg Gln Ile Lys Gly Asn Val His Gly Phe Asp
      85             90             95

Glu His Ala Ala Ala Val Gly Ile Ala Arg Lys Ile Gly Phe Ala His
      100            105            110

Ala Arg Asp Asp Val Pro Asp Thr Leu Pro Phe Gly Lys Asn Gly Gly
      115            120            125

Val Lys Gln Glu Lys Arg Val Thr Pro Val His Lys Gly Ile Gly Asn

```

130	135	140
Ala Val Val Gly Gly Phe Asp Gly Gly Gly Phe Asp Gly Gly Gly Phe		
145	150	155 160
Val His Gln Gly Val Val Arg Asn Leu Pro His Gln Ala Gln Ile Glu		
	165	170 175
Tyr Gly Leu Thr Asp Thr Gln Ile Leu Arg Asp Pro Leu Cys Ala Phe		
	180	185 190
Gln Leu Asp Gly Met Ala Leu Pro Val Ser Glu Gly Asp Gly Leu Asp		
	195	200 205
Val Phe Ala Pro Val Gly Leu Asp Cys Leu Asn Gln Ala Gly Gly Arg		
	210	215 220
Ile Leu Thr Ala Arg Glu Asp Asp Gln Gly Phe Leu Val		
225	230	235

<210> 1049
 <211> 699
 <212> DNA
 <213> Neisseria meningitidis

<400> 1049
 atggagcttg ggcataatcgt attccttatg gtttgccgctg gttcagacgg cctttttact 60
 ttccagatat tccgccagcc cgcgttcgcg caagatacag ctccggcatt cgcggcagcc 120
 gccgacgatg ccgttatagc aggtgtgggt ttgctcgcgg atatatcca gcacgcccatt 180
 ttcgtccgcc aacgcccacg tttgcgcctt ggtcagatac atcagcggcg tgtggatttg 240
 aaaatcatag tccatcgcca aattaagggt aacgttcacg gatttgacaa acacgtcgcg 300
 gcagtcggga tagccggaga agtcggtttc gcacacgccc gcgatgatgt gccgtatccc 360
 ctgccctttg gcgtaaatcg cggcatagag caggaaaagc gcgttcgcgc cgtctacaaa 420
 ggtattcgga acgccgtttt cggcagtttc gatggcggcg gtgtcgtcca tcagggcatt 480
 gtgcgtaatc tgccgcatca ggctcaagtc gagtacggtt tgtttgacgc ccaaatacctg 540
 cgcaatccag cgggcacggt ccagctcgac ggcattggcg tgcccgtatt ggaaagtaat 600
 ggcttgacg ttttcgcgcc cgtagggttg gattgcctga atcaggcagg tggtcgaatc 660
 ctgaccgccc gaaaagatga ccaaggcctt ttggtttga 699

<210> 1050
 <211> 232
 <212> PRT
 <213> Neisseria meningitidis

<400> 1050
 Met Glu Leu Gly His Ile Val Phe Leu Met Val Cys Ala Cys Ser Asp
 1 5 10 15
 Gly Leu Phe Thr Phe Gln Ile Phe Arg Gln Pro Ala Phe Ala Gln Asp
 20 25 30
 Thr Ala Arg Ala Phe Ala Ala Ala Asp Asp Ala Val Ile Ala Gly
 35 40 45
 Val Gly Leu Leu Ala Asp Ile Val Gln His Ala His Phe Val Arg Gln

50	55	60
Arg Pro Arg Leu Arg Leu Gly Gln Ile His Gln Arg Arg Val Asp Leu		
65	70	75 80
Lys Ile Ile Val His Arg Gln Ile Lys Gly Asn Val His Arg Phe Asp		
	85	90 95
Lys His Val Ala Ala Val Gly Ile Ala Gly Glu Val Gly Phe Ala His		
	100	105 110
Ala Arg Asp Asp Val Pro Tyr Pro Leu Pro Phe Gly Val Asn Arg Gly		
	115	120 125
Ile Glu Gln Glu Lys Arg Val Ala Ala Val Tyr Lys Gly Ile Arg Asn		
	130	135 140
Ala Val Phe Gly Ser Phe Asp Gly Gly Gly Val Val His Gln Gly Ile		
145	150	155 160
Val Arg Asn Leu Pro His Gln Ala Gln Val Glu Tyr Gly Leu Phe Asp		
	165	170 175
Ala Gln Ile Leu Arg Asn Pro Ala Gly Thr Phe Gln Leu Asp Gly Met		
	180	185 190
Ala Leu Pro Val Leu Glu Ser Asn Gly Leu Asp Val Phe Ala Pro Val		
	195	200 205
Gly Leu Asp Cys Leu Asn Gln Ala Gly Gly Arg Ile Leu Thr Ala Arg		
	210	215 220
Lys Asp Asp Gln Gly Leu Leu Val		
225	230	

<210> 1051

<211> 699

<212> DNA

<213> Neisseria meningitidis

<400> 1051

```

atggagcttg ggcataatcgt attccttatg gtttgcgcggt gttcagacgg cctttttact 60
ttccagatat tccgccagcc cgcgttcgcg caagatacag ctcgggcatt cgcggcagcc 120
gccgacgatg ccgttatagc aggtgtgggt ttgctcgcgg ataatgtcca gcgcgcccatt 180
ttcgtccgcc aacgcccagg tttgcgcctt ggtcagatac atcagcggcg tgtggatttg 240
aaaatcatag tccatcgcca gattaagggt aacgttcatg gatttgacaa acacgtcacg 300
gcagtcggga tagccggaga agtcggtttc gcacacgccc gcgatgatgt gccgtatccc 360
ctgccctttg gcgtaaatcg cggcatagag caggaaaagc gcgttgcggc cgtctacaaa 420
ggtattcgga acgcccgttt cggcagtttc gatggcggcg gtgtcgtcca tcagggcatt 480
gtgcgtaatc tgccgcatca ggctcaagtc gagtacggtt tgtttgacgc ccaaactctg 540
cgcaatccag cgggcacggt ccagctcgac ggcatggcgt tgcccgtatt ggaaagtaat 600
ggcttgacg ttttcgcgcc cgtagggttg gattgcctga atcaggcagg tggtcgaatc 660
ctgaccgccc gaaaagatga ccaaggcttt ttggtttga 699

```

<210> 1052

<211> 232
<212> PRT
<213> Neisseria meningitidis

<400> 1052

Met Glu Leu Gly His Ile Val Phe Leu Met Val Cys Ala Cys Ser Asp
1 5 10 15
Gly Leu Phe Thr Phe Gln Ile Phe Arg Gln Pro Ala Phe Ala Gln Asp
20 25 30
Thr Ala Arg Ala Phe Ala Ala Ala Ala Asp Asp Ala Val Ile Ala Gly
35 40 45
Val Gly Leu Leu Ala Asp Ile Val Gln Arg Ala His Phe Val Arg Gln
50 55 60
Arg Pro Ser Leu Arg Leu Gly Gln Ile His Gln Arg Arg Val Asp Leu
65 70 75 80
Lys Ile Ile Val His Arg Gln Ile Lys Gly Asn Val His Gly Phe Asp
85 90 95
Lys His Val Thr Ala Val Gly Ile Ala Gly Glu Val Gly Phe Ala His
100 105 110
Ala Arg Asp Asp Val Pro Tyr Pro Leu Pro Phe Gly Val Asn Arg Gly
115 120 125
Ile Glu Gln Glu Lys Arg Val Ala Ala Val Tyr Lys Gly Ile Arg Asn
130 135 140
Ala Val Phe Gly Ser Phe Asp Gly Gly Gly Val Val His Gln Gly Ile
145 150 155 160
Val Arg Asn Leu Pro His Gln Ala Gln Val Glu Tyr Gly Leu Phe Asp
165 170 175
Ala Gln Ile Leu Arg Asn Pro Ala Gly Thr Phe Gln Leu Asp Gly Met
180 185 190
Ala Leu Pro Val Leu Glu Ser Asn Gly Leu Asp Val Phe Ala Pro Val
195 200 205
Gly Leu Asp Cys Leu Asn Gln Ala Gly Gly Arg Ile Leu Thr Ala Arg
210 215 220
Lys Asp Asp Gln Gly Phe Leu Val
225 230

<210> 1053
<211> 549
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1053

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atggcacggtt taaccgtaca caccctcgaa accgcccccg aagccgccaa accgcgcgta 60
gaggccgtac caaaaaaciaa cggttttatc cccaacctca tcggcggtatt ggcaaacgcc 120
cccgaagctt tggcgtttta ccaagaagtc ggcaagctca acgccgccaa cagcctgacc 180
gccggcgaag tcgaagtgat ccggtatcat gccgtccgca ccaaccaatg cagcttctgc 240
gtggcagggc acaccaaact cgcaaccctg aaaaaactcc tgtccgagca atccctcaat 300
gccgcccgcg ctttggcggc aggtaaatct gacgatgcca aactcggcgc gcttgccgcc 360
ttcacccaag ccgtaatggc gaaaaaaggc gcagtatccg acgacgaact caacgccttc 420
ctcgaagcgg gctacaaccg gcagcaggca gtcgaagtcg taatgggcgt agccttggca 480
actttgtgca actacgccaa caacctcgcc caaaccgaaa tcaaccccaa attgcaggca 540
tacgcctaa 549
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<210> 1054

<211> 182

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1054

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Met Ala Arg Leu Thr Val His Thr Leu Glu Thr Ala Pro Glu Ala Ala
  1              5              10              15

Lys Pro Arg Val Glu Ala Val Pro Lys Asn Asn Gly Phe Ile Pro Asn
          20          25          30

Leu Ile Gly Val Leu Ala Asn Ala Pro Glu Ala Leu Ala Phe Tyr Gln
      35          40          45

Glu Val Gly Lys Leu Asn Ala Ala Asn Ser Leu Thr Ala Gly Glu Val
      50          55          60

Glu Val Ile Arg Ile Ile Ala Val Arg Thr Asn Gln Cys Ser Phe Cys
      65          70          75          80

Val Ala Gly His Thr Lys Leu Ala Thr Leu Lys Lys Leu Leu Ser Glu
          85          90          95

Gln Ser Leu Asn Ala Ala Arg Ala Leu Ala Ala Gly Lys Ser Asp Asp
      100          105          110

Ala Lys Leu Gly Ala Leu Ala Ala Phe Thr Gln Ala Val Met Ala Lys
      115          120          125

Lys Gly Ala Val Ser Asp Asp Glu Leu Asn Ala Phe Leu Glu Ala Gly
      130          135          140

Tyr Asn Arg Gln Gln Ala Val Glu Val Val Met Gly Val Ala Leu Ala
      145          150          155          160

Thr Leu Cys Asn Tyr Ala Asn Asn Leu Ala Gln Thr Glu Ile Asn Pro
          165          170          175

Lys Leu Gln Ala Tyr Ala
      180
```

<210> 1055

<211> 233
<212> DNA
<213> *Neisseria meningitidis*

<400> 1055
gcagcaggcg aatttgacga tgccaaactc ggcgcgctcg ccgccttcac ccaagccgta 60
atggcgaaaa aaggcgcggt atccgacgag gaactcaaag catttttcga tgcgggctac 120
aaccagcagc aggcagtcga agtcgtgatg ggcgctasyct ggcaaccctg tgcaactacg 180
tcaacaacct cggacaaacc gaaatcaacc ccgaattgca ggcttacgcc tga 233

<210> 1056
<211> 77
<212> PRT
<213> *Neisseria meningitidis*

<400> 1056
Ala Ala Gly Glu Phe Asp Asp Ala Lys Leu Gly Ala Leu Ala Ala Phe
1 5 10 15
Thr Ala Val Met Ala Lys Lys Gly Ala Val Ser Asp Glu Glu Leu Lys
20 25 30
Ala Phe Phe Asp Ala Gly Tyr Asn Gln Gln Gln Ala Val Glu Val Val
35 40 45
Met Gly Val Xaa Leu Ala Thr Leu Cys Asn Tyr Val Asn Asn Leu Gly
50 55 60
Gln Thr Glu Ile Asn Pro Glu Leu Gln Ala Tyr Ala Xaa
65 70 75

<210> 1057
<211> 549
<212> DNA
<213> *Neisseria meningitidis*

<400> 1057
atggcacgtt taaccgtaca caccctcgaa accgcccccg aagccgcca aagcgcgctc 60
gaggcggtac ttcaaaacaa cggttttatc cccaacctta tcggcggtatt atcaaacgcc 120
cccgaagcct tggcgtttta ccaagaagtc ggcaagctca acgccgcca cagcctgacc 180
gccggcgaag tcgaagtaat ccagattatt gccgcccga ccaaccaatg cggcttctgc 240
gtggcagggc acaccaaact cgcaaccctg aaaaaactcc tttccgaaca atccgtcaaa 300
gccgcgcgcg ctttggcggc aggcgaattt gacgatgcta aactcggcgc gctcgccgcc 360
tttaccceaag ccgtaatggc aaaaaaaggc gcggtatccg acgaggaact caaagcattt 420
tttgatgcgg gctacaacca gcagcaggca gtcgaagtcg tgatgggcgt agccttggca 480
actttgtgca actacgtcaa caacctcgga caaacccgaa tcaaccccgga attgcaggct 540
tacgcctga 549

<210> 1058
<211> 182
<212> PRT
<213> *Neisseria meningitidis*

<400> 1058

Met Ala Arg Leu Thr Val His Thr Leu Glu Thr Ala Pro Glu Ala Ala
 1 5 10 15
 Lys Ala Arg Val Glu Ala Val Leu Gln Asn Asn Gly Phe Ile Pro Asn
 20 25 30
 Leu Ile Gly Val Leu Ser Asn Ala Pro Glu Ala Leu Ala Phe Tyr Gln
 35 40 45
 Glu Val Gly Lys Leu Asn Ala Ala Asn Ser Leu Thr Ala Gly Glu Val
 50 55 60
 Glu Val Ile Gln Ile Ile Ala Ala Arg Thr Asn Gln Cys Gly Phe Cys
 65 70 75 80
 Val Ala Gly His Thr Lys Leu Ala Thr Leu Lys Lys Leu Leu Ser Glu
 85 90 95
 Gln Ser Val Lys Ala Ala Arg Ala Leu Ala Ala Gly Glu Phe Asp Asp
 100 105 110
 Ala Lys Leu Gly Ala Leu Ala Ala Phe Thr Gln Ala Val Met Ala Lys
 115 120 125
 Lys Gly Ala Val Ser Asp Glu Glu Leu Lys Ala Phe Phe Asp Ala Gly
 130 135 140
 Tyr Asn Gln Gln Gln Ala Val Glu Val Val Met Gly Val Ala Leu Ala
 145 150 155 160
 Thr Leu Cys Asn Tyr Val Asn Asn Leu Gly Gln Thr Glu Ile Asn Pro
 165 170 175
 Glu Leu Gln Ala Tyr Ala
 180

<210> 1059

<211> 687

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1059

ttgactttaa cccgaaaaac ccttttcttc ctcaccgccg cggttcggcac aactccctt 60
 cagacggcat ccgccgacgc agtgggtcaag ccgaaaaaac tgcacgcctc cgccaaccgc 120
 agctacaaag tcgccgaatt caccgaaacc ggcaacgcct cgtggtacgg cggcagggtt 180
 caccggcgca aaacttccgg cggagaccgc tacgatatga acgcctttac cgccgcccac 240
 aaaaccctgc ccatccccag ccatgtgctc gtaaccaaca ccaaaaaacgg caaaagcgtc 300
 atcgctccgc tcaacgaccg cggccccttc caccggcaacc gcatcatcga cgtatccaaa 360
 gccgcgcgcg aaaaattggg ctttgtcagc caagggtacg cacacgtcaa aatcgaacaa 420
 atcgctccgc gccaatccgc accgggtgcc gaaaacaaag acatctttat cgacttgaaa 480
 tctttcggtg cggaacacga agcacaagcc tatctgaacc aagccgccca aaatttcgcc 540
 gcttcgtcat caagcccgaa cctctcggtt gaaaaacgcc gttacgaata cgttgtcaaa 600
 atgggcccgt ttgcctcgca ggaacgcgcc gccgaagccg aagcgcaggc acgcggtatg 660
 gttcggggcg tactgacctc cggttga 687

<210> 1060
<211> 228
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1060
Leu Thr Leu Thr Arg Lys Thr Leu Phe Leu Leu Thr Ala Ala Phe Gly
1 5 10 15
Thr His Ser Leu Gln Thr Ala Ser Ala Asp Ala Val Val Lys Pro Glu
20 25 30
Lys Leu His Ala Ser Ala Asn Arg Ser Tyr Lys Val Ala Glu Phe Thr
35 40 45
Gln Thr Gly Asn Ala Ser Trp Tyr Gly Gly Arg Phe His Gly Arg Lys
50 55 60
Thr Ser Gly Gly Asp Arg Tyr Asp Met Asn Ala Phe Thr Ala Ala His
65 70 75 80
Lys Thr Leu Pro Ile Pro Ser His Val Arg Val Thr Asn Thr Lys Asn
85 90 95
Gly Lys Ser Val Ile Val Arg Val Asn Asp Arg Gly Pro Phe His Gly
100 105 110
Asn Arg Ile Ile Asp Val Ser Lys Ala Ala Ala Gln Lys Leu Gly Phe
115 120 125
Val Ser Gln Gly Thr Ala His Val Lys Ile Glu Gln Ile Val Pro Gly
130 135 140
Gln Ser Ala Pro Val Ala Glu Asn Lys Asp Ile Phe Ile Asp Leu Lys
145 150 155 160
Ser Phe Gly Thr Glu His Glu Ala Gln Ala Tyr Leu Asn Gln Ala Ala
165 170 175
Gln Asn Phe Ala Ala Ser Ser Ser Ser Pro Asn Leu Ser Val Glu Lys
180 185 190
Arg Arg Tyr Glu Tyr Val Val Lys Met Gly Pro Phe Ala Ser Gln Glu
195 200 205
Arg Ala Ala Glu Ala Glu Ala Gln Ala Arg Gly Met Val Arg Ala Val
210 215 220
Leu Thr Ser Gly
225

<210> 1061
<211> 720
<212> DNA
<213> Neisseria meningitidis

<400> 1061

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ttgacttttaa cccgaaaaaac cctttttcctt ctcaccgcgc cattcggcac acactccctt 60
cagacggcat cgcgcgacgc agtgggtcaag gcagaaaaaac tgcacgcctc cgccaaccgc 120
agctacaaag tcgcgcgaaa acgctacacg ccgaaaaaac aagtcgccga attcacgcaa 180
accggcaacg cctcgtggta cggcggcagg ttccacgggc gcaaaacttc cggcggagaa 240
cgatacgata tgaacgcctt taccgccgcc cacaaaaacc tgcccatccc cagctatgtg 300
cgcgtaacca ataccaaaaa cggcaaaaagc gtcacgtcc gcgtcaacga ccgcggcccc 360
ttccacggca accgcatcat cgacgtatcc aaagcgcgcg cgcaaaaatt gggctttgtc 420
aaccaaggga cggcacacgt caaaatcgaa caaatcgtcc cggggccaatc cgcaccggtt 480
gccgaaaaca aagacatctt tatcgacttg aaatctttcg gtacggaaca cgaagcacia 540
gcctatctga accaagccgc ccaaaacttc gccgtttcgt catcggttac gaacctctcg 600
gttgaaaaaac gccgttacga atacgtcgtc aaaatgggac cgtttacctc gcaggaacgc 660
gccgccgaag ccgaagctca ggcgcgcggt atggttcggg cggatttgac cgccggctga 720
```

<210> 1062

<211> 239

<212> PRT

<213> *Neisseria meningitidis*

<400> 1062

```
Leu Thr Leu Thr Arg Lys Thr Leu Phe Leu Leu Thr Ala Ala Phe Gly
  1             5             10             15

Thr His Ser Leu Gln Thr Ala Ser Ala Asp Ala Val Val Lys Ala Glu
      20             25             30

Lys Leu His Ala Ser Ala Asn Arg Ser Tyr Lys Val Ala Gly Lys Arg
      35             40             45

Tyr Thr Pro Lys Asn Gln Val Ala Glu Phe Thr Gln Thr Gly Asn Ala
      50             55             60

Ser Trp Tyr Gly Gly Arg Phe His Gly Arg Lys Thr Ser Gly Gly Glu
      65             70             75             80

Arg Tyr Asp Met Asn Ala Phe Thr Ala Ala His Lys Thr Leu Pro Ile
      85             90             95

Pro Ser Tyr Val Arg Val Thr Asn Thr Lys Asn Gly Lys Ser Val Ile
      100            105            110

Val Arg Val Asn Asp Arg Gly Pro Phe His Gly Asn Arg Ile Ile Asp
      115            120            125

Val Ser Lys Ala Ala Ala Gln Lys Leu Gly Phe Val Asn Gln Gly Thr
      130            135            140

Ala His Val Lys Ile Glu Gln Ile Val Pro Gly Gln Ser Ala Pro Val
      145            150            155            160

Ala Glu Asn Lys Asp Ile Phe Ile Asp Leu Lys Ser Phe Gly Thr Glu
      165            170            175

His Glu Ala Gln Ala Tyr Leu Asn Gln Ala Ala Gln Asn Phe Ala Val
      180            185            190
```

Ser Ser Ser Gly Thr Asn Leu Ser Val Glu Lys Arg Arg Tyr Glu Tyr
 195 200 205

Val Val Lys Met Gly Pro Phe Thr Ser Gln Glu Arg Ala Ala Glu Ala
 210 215 220

Glu Ala Gln Ala Arg Gly Met Val Arg Ala Val Leu Thr Ala Gly
 225 230 235

<210> 1063

<211> 720

<212> DNA

<213> Neisseria meningitidis

<400> 1063

ttgacttttaa cccgaaaaac ccttttcttc ctcacgcgcg cattcggcac acatttccttt 60
 cagacggcat ccgccgacgc agtggtcagg gcagaaaaac tgcacgcctc cgccaaccgc 120
 agctacaaag tcgccggaaa acgctacacg ccgaaaaacc aagtcgccga attcacgcaa 180
 accggcaacg cctcgtggta cggcggcagg tttcacgggc gcaaaacttc cggcggagaa 240
 cgatacgata tgaacgcctt taccgcgcgc cacaaaaccc tgcccatccc cagctatgtg 300
 cgcgtaacca ataccaaaaa cggcaaaagc gtcatcgctc gcgtcaacga ccgcggcccc 360
 ttccacggca accgcatcat cgacgtatcc aaagccgcgc cgcaaaaatt gggctttgtc 420
 aaccaaggga cggcgcacgt caaaatcgaa caaatcgctc cgggccaatc cgcaccggtt 480
 gccgaaaaca aagacatctt catcgacttg aaatctttcg gtacggaaca cgaagcacia 540
 gcctatctga accaagccgc ccaaaacctg gcttcacgcg catcaaaccc gaacctctcg 600
 gttgaaaaac gccgttacga atacgtcgtc aaaatgggac cgtttgccct gcaggaacgc 660
 gccgccgagg ccgaagctca ggcgcgcggt atggttcggg cgggtattaac cgccggttga 720

<210> 1064

<211> 239

<212> PRT

<213> Neisseria meningitidis

<400> 1064

Leu Thr Leu Thr Arg Lys Thr Leu Phe Leu Leu Thr Ala Ala Phe Gly
 1 5 10 15

Ile His Ser Phe Gln Thr Ala Ser Ala Asp Ala Val Val Arg Ala Glu
 20 25 30

Lys Leu His Ala Ser Ala Asn Arg Ser Tyr Lys Val Ala Gly Lys Arg
 35 40 45

Tyr Thr Pro Lys Asn Gln Val Ala Glu Phe Thr Gln Thr Gly Asn Ala
 50 55 60

Ser Trp Tyr Gly Gly Arg Phe His Gly Arg Lys Thr Ser Gly Gly Glu
 65 70 75 80

Arg Tyr Asp Met Asn Ala Phe Thr Ala Ala His Lys Thr Leu Pro Ile
 85 90 95

Pro Ser Tyr Val Arg Val Thr Asn Thr Lys Asn Gly Lys Ser Val Ile
 100 105 110

Val Arg Val Asn Asp Arg Gly Pro Phe His Gly Asn Arg Ile Ile Asp
115 120 125

Val Ser Lys Ala Ala Ala Gln Lys Leu Gly Phe Val Asn Gln Gly Thr
130 135 140

Ala His Val Lys Ile Glu Gln Ile Val Pro Gly Gln Ser Ala Pro Val
145 150 155 160

Ala Glu Asn Lys Asp Ile Phe Ile Asp Leu Lys Ser Phe Gly Thr Glu
165 170 175

His Glu Ala Gln Ala Tyr Leu Asn Gln Ala Ala Gln Asn Leu Ala Ser
180 185 190

Ser Ala Ser Asn Pro Asn Leu Ser Val Glu Lys Arg Arg Tyr Glu Tyr
195 200 205

Val Val Lys Met Gly Pro Phe Ala Ser Gln Glu Arg Ala Ala Glu Ala
210 215 220

Glu Ala Gln Ala Arg Gly Met Val Arg Ala Val Leu Thr Ala Gly
225 230 235

<210> 1065
<211> 371
<212> DNA
<213> Neisseria meningitidis

<400> 1065
atgtcgggtga ttttgccgcc gacacgcgcc aacgctgctt tttcggcttg ggcgcggctg 60
atgattttgt cttgtttgtt gtgttggtgt gcggcgtgtc cgtggtcgtc atcgccgtgt 120
ccgtcgtggt gggcgagcgc gggggcggaa atgctcagca gtgcggttgc ggcggaggtc 180
aagagaaggt gtttgatgtt catatttttg cctttgtaaa tcgtgggttg gaaaatgttg 240
atattaataa ggtatcaaat aaccgtcagc cggcgggtcaa taccgcccga accataccgc 300
gcgcctgagc ttcggcttcg gcggcgcggt cctgcgaggt aaacgggtccc attttgacga 360

cgtatttcgta a 371

<210> 1066
<211> 123
<212> PRT
<213> Neisseria meningitidis

<400> 1066
Met Ser Val Ile Leu Pro Pro Thr Arg Ala Asn Ala Ala Phe Ser Ala
1 5 10 15

Trp Ala Arg Leu Met Ile Leu Ser Cys Leu Leu Cys Trp Cys Ala Ala
20 25 30

Cys Pro Trp Ser Ser Ser Pro Cys Pro Ser Trp Trp Ala Ser Ala Gly
35 40 45

Ala Glu Met Leu Ser Ser Ala Val Ala Ala Glu Val Lys Arg Arg Cys

50 55 60
 Leu Met Phe Ile Xaa Phe Ala Phe Val Asn Arg Gly Leu Glu Asn Val
 65 70 75 80
 Asp Ile Asn Lys Val Ser Asn Asn Arg Gln Pro Ala Val Asn Thr Ala
 85 90 95
 Arg Thr Ile Pro Arg Ala Xaa Ala Ser Ala Ala Arg Ser Cys
 100 105 110
 Glu Val Asn Gly Pro Ile Leu Thr Thr Tyr Ser
 115 120

<210> 1067

<211> 361

<212> DNA

<213> *Neisseria meningitidis*

<400> 1067

atgtcgggtga ttttgccgcc gacacgcgcc aacgctgctt tttcggcttg ggcgcggctg 60
 atgattttgt cttgtttgct gtgttggtgt gcggcggtgc cgtggtcgtc atcgccgtgt 120
 ccgtcgtggt ggcgcgagtgc gggggcggaa atgccatca gtgcggttgc ggcggcggtc 180
 aagagaaggc gtttgaagtt catttttgct cctgcgaagt atctggtggt gtttgaagga 240
 cgtaaaggcg ggacatcaac cggcggttaa taccgcccga accataccgc gcgcctgagc 300
 ttcggcctcg gcggcgcggt cctgcgaggg aaacggtccc attttgacga cgtattcgta 360
 a

<210> 1068

<211> 119

<212> PRT

<213> *Neisseria meningitidis*

<400> 1068

Met Ser Val Ile Leu Pro Pro Thr Arg Ala Asn Ala Ala Phe Ser Ala
 1 5 10 15
 Trp Ala Arg Leu Met Ile Leu Ser Cys Leu Leu Cys Trp Cys Ala Ala
 20 25 30
 Cys Pro Trp Ser Ser Ser Pro Cys Pro Ser Trp Trp Ala Ser Ala Gly
 35 40 45
 Ala Glu Met Pro Ile Ser Ala Val Ala Ala Ala Val Lys Arg Arg Arg
 50 55 60
 Leu Lys Phe Ile Phe Ala Pro Ala Lys Tyr Leu Xaa Xaa Cys Leu Lys
 65 70 75 80
 Asp Val Lys Ala Gly His Gln Pro Ala Val Asn Thr Ala Arg Thr Ile
 85 90 95
 Pro Arg Ala Ala Ser Ala Ser Ala Ala Arg Ser Cys Glu Ala Asn Gly
 100 105 110

Pro Ile Leu Thr Thr Tyr Ser
115

<210> 1069

<211> 347

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1069

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agttcagacg gcacgcgcgc cgacaatgcc caaacagaaa gcccatcatg accgcatcca 60
tgtacatcct tttgggtcttg gcactcatct ttgccaacgc ccccttcctc acgaccagac 120
tgttcggcgt ggccgcgctc aagcgcaaac atttcggaca ccacctgac gagctggcgg 180
caggtttcgc gctgaccgcc tctcttgccct acatcctcga atcccgtgcg ggagcggtac 240
acaatcaggg ttgggagttt tacgccaccg tcgtctgcct gtacctcatt ttcgccttcc 300
cgtgtttcgt gcggcggtat ttttggcaca cgcgcaacag ggaataa 347
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<210> 1070

<211> 116

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1070

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Met Gln Phe Arg Arg His Arg Arg Arg Gln Cys Pro Asn Arg Lys Pro
  1           5           10           15
Ile Met Thr Ala Ser Met Tyr Ile Leu Leu Val Leu Ala Leu Ile Phe
          20           25           30
Ala Asn Ala Pro Phe Leu Thr Thr Arg Leu Phe Gly Val Ala Ala Leu
          35           40           45
Lys Arg Lys His Phe Gly His His Leu Ile Glu Leu Ala Ala Gly Phe
          50           55           60
Ala Leu Thr Ala Ser Leu Ala Tyr Ile Leu Glu Ser Arg Ala Gly Ala
          65           70           75           80
Val His Asn Gln Gly Trp Glu Phe Tyr Ala Thr Val Val Cys Leu Tyr
          85           90           95
Leu Ile Phe Ala Phe Pro Cys Phe Val Arg Arg Tyr Phe Trp His Thr
          100          105          110
Arg Asn Arg Glu
          115
```

<210> 1071

<211> 363

<212> DNA

<213> *Neisseria meningitidis*

<400> 1071

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atgccgttcc gcaacgcggt cagacggcat cgccgccgac aacgcctaaa cagaaagccc 60
```



```

accatgaccg catccatgta catccttttg gtcttggcac tcatctttgc caacgcccc 120
ttcctcacga ccagactggt cggcgtggcc ractcaagc gcaaacattt cggacaccac 180
atgatcgagc tggcggcagg tttcgcgctg accgccgttc ttgcctacat cctsgaatcc 240
cgtgcaggat cggtagacga tcagggttgg gagttttatg ccacagtcgt ctgcctgtac 300
ctgatttttg cgtttccatg ttttgtgtgg cggatattttt ggcacacgcg caacagggaa 360
tag 363

```

<210> 1072

<211> 120

<212> PRT

<213> *Neisseria meningitidis*

<400> 1072

```

Met Pro Phe Arg Asn Ala Phe Arg Arg His Arg Arg Arg Gln Arg Leu
 1           5           10           15

Asn Arg Lys Pro Thr Met Thr Ala Ser Met Tyr Ile Leu Leu Val Leu
          20           25           30

Ala Leu Ile Phe Ala Asn Ala Pro Phe Leu Thr Thr Arg Leu Phe Gly
          35           40           45

Val Ala Xaa Leu Lys Arg Lys His Phe Gly His His Met Ile Glu Leu
          50           55           60

Ala Ala Gly Phe Ala Leu Thr Ala Val Leu Ala Tyr Ile Leu Glu Ser
          65           70           75           80

Arg Ala Gly Ser Val His Asp Gln Gly Trp Glu Phe Tyr Ala Thr Val
          85           90           95

Val Cys Leu Tyr Leu Ile Phe Ala Phe Pro Cys Phe Val Trp Arg Tyr
          100          105          110

Phe Trp His Thr Arg Asn Arg Glu
          115          120

```

<210> 1073

<211> 363

<212> DNA

<213> *Neisseria meningitidis*

<400> 1073

```

atgccgttcc gcaatgcgtt cagacggcat cgccgcccgc aatgcccaaa cagaaagccc 60
gccatgaccg catccatgta catccttttg ctgcttgcc tgaatttttg caacgcccc 120
ttcctcacga ccaagctggt cggcatcgta ccgtcaagc gcaaacattt cggacaccac 180
ctgatcgagc tggcggcagg tttcgcgctg accgccgttc ttgcctacat cctcgaatcc 240
cgtgcgggag cggtagacga tcagggttgg gagttttacg ccaccgtcgt ctgcctgtac 300
ctgatttttg cgtttccctg tttcgtgtgg cggatattttt ggcacacgcg caacagggaa 360
tag 363

```

<210> 1074

<211> 120

<212> PRT

<213> Neisseria meningitidis

<400> 1074

Met Pro Phe Arg Asn Ala Phe Arg Arg His Arg Arg Arg Gln Cys Pro
1 5 10 15

Asn Arg Lys Pro Ala Met Thr Ala Ser Met Tyr Ile Leu Leu Leu Leu
20 25 30

Ala Leu Ile Phe Ala Asn Ala Pro Phe Leu Thr Thr Lys Leu Phe Gly
35 40 45

Ile Val Pro Leu Lys Arg Lys His Phe Gly His His Leu Ile Glu Leu
50 55 60

Ala Ala Gly Phe Ala Leu Thr Ala Val Leu Ala Tyr Ile Leu Glu Ser
65 70 75 80

Arg Ala Gly Ala Val His Asp Gln Gly Trp Glu Phe Tyr Ala Thr Val
85 90 95

Val Cys Leu Tyr Leu Ile Phe Ala Phe Pro Cys Phe Val Trp Arg Tyr
100 105 110

Phe Trp His Thr Arg Asn Arg Glu
115 120

<210> 1075

<211> 384

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1075

atgcaagtcg ccttttttct cgccgtggta ttcaaaaata tgggtttcca caatcgcac 60
ggtcgggcag gcctcttcgc agaaaccgca gaagatgcac ttggtcaggt cgatgtcgta 120
acgcttggtg cggcgggtgc cgtcttcgcg ttcttccgat tcgatgttga tcgccattgc 180
cggacacacc gcctcgcaca atttacacgc gatgcagcgt tcctctccgt tcggaaaacg 240
gcgttgccgc tgcagaccgc ggaacgcac ggattgcgcg gttttctctt cgggaaaata 300
aattgtgtct ttgcgggcaa aaaagttttt gagcgttacg cccatgcctt tgaccagttc 360
gccaaagcaga aaggttttta ctaa 384

<210> 1076

<211> 127

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1076

Met Gln Val Ala Phe Phe Leu Ala Val Val Phe Lys Asn Met Gly Phe
1 5 10 15

His Asn Arg Ile Gly Arg Ala Gly Leu Phe Ala Glu Thr Ala Glu Asp
20 25 30

Ala Leu Gly Gln Val Asp Val Val Thr Leu Gly Ala Ala Gly Ala Val

35

40

45

Phe Ala Phe Phe Arg Phe Asp Val Asp Arg His Cys Arg Thr His Arg
50 55 60

Leu Ala Gln Phe Thr Arg Asp Ala Ala Phe Leu Ser Val Arg Lys Thr
65 70 75 80

Ala Leu Arg Val Gln Thr Ala Glu Thr His Gly Leu Arg Arg Phe Leu
85 90 95

Phe Gly Lys Ile Asn Cys Val Phe Ala Gly Lys Lys Val Phe Glu Arg
100 105 110

Tyr Ala His Ala Phe Asp Gln Phe Ala Lys Gln Lys Gly Phe Tyr
115 120 125

<210> 1077

<211> 384

<212> DNA

<213> Neisseria meningitidis

<400> 1077

gtgcaagtcg ccttttttct cgccgtggta ttcaaaaata tggggtttcca caatcgcatc 60
agtcgggcat gcctcttcgc agaaaccgca gaagatgcac ttggtcaggt cgatgtcgta 120
acgcttggtg cggcgcgtac cgtcttcacg ttcttccgat tcgatgttaa tcgccattgc 180
cggacacact gcctcacaca acttacacgc gatacaccgc tcttcgccgt tcggataaccg 240
ccgctgcgcg tgcagaccgc ggaaacgcac ggattgcggc gttttctctt cggggaaata 300
aattgtgtct ttgcgggcga aaaagttttt gagcgttacg cccatacctt ttaccaattc 360
gccaagcaga aaggttttta ctaa 384

<210> 1078

<211> 127

<212> PRT

<213> Neisseria meningitidis

<400> 1078

Val Gln Val Ala Phe Phe Leu Ala Val Val Phe Lys Asn Met Gly Phe
1 5 10 15

His Asn Arg Ile Ser Arg Ala Cys Leu Phe Ala Glu Thr Ala Glu Asp
20 25 30

Ala Leu Gly Gln Val Asp Val Val Thr Leu Gly Ala Ala Arg Thr Val
35 40 45

Phe Thr Phe Phe Arg Phe Asp Val Asn Arg His Cys Arg Thr His Cys
50 55 60

Leu Thr Gln Leu Thr Arg Asp Thr Pro Leu Phe Ala Val Arg Ile Pro
65 70 75 80

Pro Leu Arg Val Gln Thr Ala Glu Thr His Gly Leu Arg Arg Phe Leu
85 90 95

Phe Gly Glu Ile Asn Cys Val Phe Ala Gly Glu Lys Val Phe Glu Arg
100 105 110

Tyr Ala His Thr Phe Tyr Gln Phe Ala Lys Gln Lys Gly Phe Tyr
115 120 125

<210> 1079
<211> 384
<212> DNA
<213> Neisseria meningitidis

<400> 1079
gtgcaagtcg ccttttttct cgccgtggta ttcaaaaata tgggtttcca caatcgcatc 60
ggtcgggcag gcttcttcgc agaaaccgca gaagatgcac ttggtcaggt cgatgtcgta 120
acgcttgggtg cggcgcggtgc cgtcttcgcg ttcttccgat tcgatgttga tcgccattgc 180
ggggcaaacg gcttcacaca atttacacgc gatgcagcgt tcctcgccgt ttggataacg 240
gcgttgccgcg tgcagaccgc ggaaacgcac ggattgcggc gttttctctt cgggaaaata 300
aatcgtgtct ttgcgggcaa aaaagttttt gagcgttacg cccatacctt ttaccaattc 360
gccaagcaga aaggttttta ctaa 384

<210> 1080
<211> 127
<212> PRT
<213> Neisseria meningitidis

<400> 1080
Val Gln Val Ala Phe Phe Leu Ala Val Val Phe Lys Asn Met Gly Phe
1 5 10 15

His Asn Arg Ile Gly Arg Ala Gly Phe Phe Ala Glu Thr Ala Glu Asp
20 25 30

Ala Leu Gly Gln Val Asp Val Val Thr Leu Gly Ala Ala Arg Ala Val
35 40 45

Phe Ala Phe Phe Arg Phe Asp Val Asp Arg His Cys Gly Ala Asn Gly
50 55 60

Phe Thr Gln Phe Thr Arg Asp Ala Ala Phe Leu Ala Val Trp Ile Thr
65 70 75 80

Ala Leu Arg Val Gln Thr Ala Glu Thr His Gly Leu Arg Arg Phe Leu
85 90 95

Phe Gly Lys Ile Asn Arg Val Phe Ala Gly Lys Lys Val Phe Glu Arg
100 105 110

Tyr Ala His Thr Phe Tyr Gln Phe Ala Lys Gln Lys Gly Phe Tyr
115 120 125

<210> 1081
<211> 1014

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1081

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atgaaaaaaaa atttaccgcg actggcattg gcaagtatgc tgattttgtc gggctgcgac 60
cgtttgggaa taggcaaccc gttttccgga aaggaaatth cctgcggaag cgaagagact 120
aaagagatth ttgtcaaact ggtccgcgac aatgtcgaag gtgaaaccgt caaaacttht 180
gacgacgacg cattcaaaga ccaagcattt gccgatatcg gcatatcgca tatccgcaga 240
atggtcgaac gtttgggcat aaccgtcgat gaagtccgaa ctaccgagaa aaccgacacg 300
tccagcaaac tcaaattgtga agccgcgtta aaactggacg tgcccgcaga tgttgtcgat 360
tatgccgtcg ccgccaacca atctataggc aacagccata agaaaacgcc cgactthttt 420
gaaccctact accgcaaaga aggcgcgtat tatgtcaaaa ctatttctta cagcgtccag 480
ccgacagacg acaaaagcaa aatctttgcc gaactcagtc aggcacacga tatcatccat 540
ccgctcagcg agctggtgtc tatggcactg attaaagagc cgttggacaa agcgaaaaca 600
aggaacgaaa aacttgaagc ggcagaagcc accgcgcagg aagcgaggga ggcagaagaa 660
gcggcggcgc aggaggcatt gggtcgggag caggaagccg cccgcgtatc cgaatgggaa 720
gaacgtaca agctgtcgcg cagcgagttc gagcagtttt ggaaaggatt gcctcaaat 780
gtacagaata agctgcaagc ctgcagaaaa acatggaaaa gcggtatgga caagatctgt 840
gccaacaatg cgaaaagccga aggtgaaacg ccaaaccgca taaaagtcag tgagttggcg 900
tgtaaaacgg cagaaaccga agcacgcttg gaagagctgc acaaccgtaa aaaagccctt 960
atcgacgaaa tggtcaggga agaggacaag aaagaactgc caaagcggct ctga 1014
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<210> 1082

<211> 337

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1082

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Met Lys Lys Asn Leu Pro Ala Leu Ala Leu Ala Ser Met Leu Ile Leu
  1              5              10              15

Ser Gly Cys Asp Arg Leu Gly Ile Gly Asn Pro Phe Ser Gly Lys Glu
      20              25              30

Ile Ser Cys Gly Ser Glu Glu Thr Lys Glu Ile Leu Val Lys Leu Val
      35              40              45

Arg Asp Asn Val Glu Gly Glu Thr Val Lys Thr Phe Asp Asp Asp Ala
      50              55              60

Phe Lys Asp Gln Ala Phe Ala Asp Ile Gly Ile Ser His Ile Arg Arg
      65              70              75              80

Met Val Glu Arg Leu Gly Ile Thr Val Asp Glu Val Arg Thr Thr Glu
      85              90              95

Lys Thr Asp Thr Ser Ser Lys Leu Lys Cys Glu Ala Ala Leu Lys Leu
      100             105             110

Asp Val Pro Asp Asp Val Val Asp Tyr Ala Val Ala Ala Asn Gln Ser
      115             120             125

Ile Gly Asn Ser His Lys Lys Thr Pro Asp Phe Phe Glu Pro Tyr Tyr
      130             135             140

Arg Lys Glu Gly Ala Tyr Tyr Val Lys Thr Ile Ser Tyr Ser Val Gln
```

145	150	155	160
Pro Thr Asp Asp Lys Ser Lys Ile Phe Ala Glu Leu Ser Gln Ala His	165	170	175
Asp Ile Ile His Pro Leu Ser Glu Leu Val Ser Met Ala Leu Ile Lys	180	185	190
Glu Pro Leu Asp Lys Ala Lys Gln Arg Asn Glu Lys Leu Glu Ala Ala	195	200	205
Glu Ala Thr Ala Gln Glu Ala Arg Glu Ala Glu Glu Ala Ala Ala Gln	210	215	220
Glu Ala Leu Gly Arg Glu Gln Glu Ala Ala Arg Val Ser Glu Trp Glu	225	230	235
Glu Arg Tyr Lys Leu Ser Arg Ser Glu Phe Glu Gln Phe Trp Lys Gly	245	250	255
Leu Pro Gln Thr Val Gln Asn Lys Leu Gln Ala Ser Gln Lys Thr Trp	260	265	270
Lys Ser Gly Met Asp Lys Ile Cys Ala Asn Asn Ala Lys Ala Glu Gly	275	280	285
Glu Thr Pro Asn Gly Ile Lys Val Ser Glu Leu Ala Cys Lys Thr Ala	290	295	300
Glu Thr Glu Ala Arg Leu Glu Glu Leu His Asn Arg Lys Lys Ala Leu	305	310	315
Ile Asp Glu Met Val Arg Glu Glu Asp Lys Lys Glu Leu Pro Lys Arg	325	330	335

Leu

<210> 1083
 <211> 422
 <212> DNA
 <213> Neisseria meningitidis

<400> 1083
 atggcactga ttaaagagcc gttggacaaa gtgaaacaaa ggaacgaaga acttgaagcg 60
 gcagaagaag cggcggcgca ggaggcattg ggtcgggagc aggaagccgc ccgcgtatcc 120
 gaatgggaag aacgctacaa gctgtcgcgc agcagttcga gcagttcttg aaaggattgc 180
 ctcaaacggt acagaataag ctgcaacctt cacagaaaac atggaaaagc gggatggata 240
 aaatctgtgc caacaatgcg aaagctgaag gtaaaacgcc aaacggcata aaattcagcg 300
 aactggcatg caaacggcg aaaaccgaag cacgcttgga agagctgcac aaccgtaaaa 360
 aagcccttat cgacgaaatg gycaggggaag cggacamgaa agaactgtca aagcggctst 420
 ga 422

<210> 1084
 <211> 140

<212> PRT

<213> *Neisseria meningitidis*

<400> 1084

Met Ala Leu Ile Lys Glu Pro Leu Asp Lys Val Lys Gln Arg Asn Glu
1 5 10 15

Glu Leu Glu Ala Ala Glu Glu Ala Ala Ala Gln Glu Ala Leu Gly Arg
20 25 30

Glu Gln Glu Ala Ala Arg Val Ser Glu Trp Glu Glu Arg Tyr Lys Leu
35 40 45

Ser Arg Xaa Gln Phe Glu Gln Phe Trp Lys Gly Leu Pro Gln Thr Val
50 55 60

Gln Asn Lys Leu Gln Pro Ser Gln Lys Thr Trp Lys Ser Gly Met Asp
65 70 75 80

Lys Ile Cys Ala Asn Asn Ala Lys Ala Glu Gly Lys Thr Pro Asn Gly
85 90 95

Ile Lys Phe Ser Glu Leu Ala Cys Lys Thr Ala Lys Thr Glu Ala Arg
100 105 110

Leu Glu Glu Leu His Asn Arg Lys Lys Ala Leu Ile Asp Glu Met Xaa
115 120 125

Arg Glu Ala Asp Xaa Lys Glu Leu Ser Lys Arg Leu
130 135 140

<210> 1085

<211> 423

<212> DNA

<213> *Neisseria meningitidis*

<400> 1085

atggcactga ttaaagagcc gttggacaaa gcgaaacaaa ggaacgaaga acttgaagcg 60
gcagaagaag cggcggcgca ggaggcattg ggtcgggagc aggaagtcga ccgcgtatcc 120
gaatgggaag aacgctacaa gctgtcgcgc agcgagttcg agcagttctg gaaaggattg 180
cctcaaaccg tacagaataa gctgcaagcc tcacagaaaa catggaaaag cgggatggat 240
aaaatctgtg ccaacaatgc gaaagctgaa ggtgaaacgc caaacggcat aaaattcagc 300
gaactggcat gcaaaacggc ggaaaccgaa gcacgcttgg aagagctgca caaccgtaaa 360
aaagcccttc tcgacgaaat ggccagggaa gcggacaaga aagaactgcc aaagcggctc 420
tga 423

<210> 1086

<211> 140

<212> PRT

<213> *Neisseria meningitidis*

<400> 1086

Met Ala Leu Ile Lys Glu Pro Leu Asp Lys Ala Lys Gln Arg Asn Glu
1 5 10 15

Glu Leu Glu Ala Ala Glu Glu Ala Ala Ala Gln Glu Ala Leu Gly Arg
 20 25 30
 Glu Gln Glu Val Asp Arg Val Ser Glu Trp Glu Glu Arg Tyr Lys Leu
 35 40 45
 Ser Arg Ser Glu Phe Glu Gln Phe Trp Lys Gly Leu Pro Gln Thr Val
 50 55 60
 Gln Asn Lys Leu Gln Ala Ser Gln Lys Thr Trp Lys Ser Gly Met Asp
 65 70 75 80
 Lys Ile Cys Ala Asn Asn Ala Lys Ala Glu Gly Glu Thr Pro Asn Gly
 85 90 95
 Ile Lys Phe Ser Glu Leu Ala Cys Lys Thr Ala Glu Thr Glu Ala Arg
 100 105 110
 Leu Glu Glu Leu His Asn Arg Lys Lys Ala Leu Leu Asp Glu Met Ala
 115 120 125
 Arg Glu Ala Asp Lys Lys Glu Leu Pro Lys Arg Leu
 130 135 140

<210> 1087
 <211> 477
 <212> DNA
 <213> Neisseria meningitidis

<400> 1087
 gtgcaatccc gatatgatgg tttgcataaa tttaaacata tatgtttccgc agctatggca 60
 ctgattaaag agccgttggg caaagtgaaa caaaggaacg aagaacttga agcggcagaa 120
 gaagcggcgg cgaggaggc attgggtcgg gagcaggaag ccgcccgcgt atccgaatgg 180
 gaagaacgct acaagctgtc gcgcagcgag ttcgagcagt tctggaaagg attgcctcaa 240
 accgtacaga ataagctgca agcctcacag aaaacatgga aaagcgggat ggataaaatc 300
 tgtgccaaaca atgcgaaagc tgaaggtaaa acgccaacac gcataaaatt cagcgaactg 360
 gcatgcaaaa cggcgaaaac cgaagcacgc ttggaagagc tgcacaaccg taaaaaagcc 420
 cttatcgacg aaatggccag ggaagcggac aagaaagaac tgtcaaagcg gctctga 477

<210> 1088
 <211> 158
 <212> PRT
 <213> Neisseria meningitidis

<400> 1088
 Val Gln Ser Arg Tyr Asp Gly Leu His Lys Phe Lys His Ile Cys Ser
 1 5 10 15
 Ala Ala Met Ala Leu Ile Lys Glu Pro Leu Asp Lys Val Lys Gln Arg
 20 25 30
 Asn Glu Glu Leu Glu Ala Ala Glu Glu Ala Ala Ala Gln Glu Ala Leu
 35 40 45
 Gly Arg Glu Gln Glu Ala Ala Arg Val Ser Glu Trp Glu Glu Arg Tyr

50	55	60
Lys Leu Ser Arg Ser Glu Phe Glu Gln Phe Trp Lys Gly Leu Pro Gln		
65	70	75 80
Thr Val Gln Asn Lys Leu Gln Ala Ser Gln Lys Thr Trp Lys Ser Gly		
	85	90 95
Met Asp Lys Ile Cys Ala Asn Asn Ala Lys Ala Glu Gly Lys Thr Pro		
	100	105 110
Asn Gly Ile Lys Phe Ser Glu Leu Ala Cys Lys Thr Ala Lys Thr Glu		
	115	120 125
Ala Arg Leu Glu Glu Leu His Asn Arg Lys Lys Ala Leu Ile Asp Glu		
	130	135 140
Met Ala Arg Glu Ala Asp Lys Lys Glu Leu Ser Lys Arg Leu		
145	150	155

<210> 1089
 <211> 477
 <212> DNA
 <213> Neisseria meningitidis

<400> 1089
 gtgcaatccc gatatgatgg tttgcataaa ttttaaacata tatgttccgc agctatggca 60
 ctgattaaag agccgttgga caaagcgaaa caaaggaacg aagaacttga agcggcagaa 120
 gaagcggcgg cgcaggaggc attgggtcgg gagcaggaag tcgaccgcgt atccgaatgg 180
 gaagaacgct acaagctgtc gcgcagcgag ttcgagcagt tctggaaagg attgcctcaa 240
 accgtacaga ataagctgca agcctcacag aaaacatgga aaagcgggat ggataaaatc 300
 tgtgccaaca atgcgaaaagc tgaaggtgaa acgccaacac gcataaaatt cagcgaactg 360
 gcatgcaaaa cggcggaaaac cgaagcacgc ttggaagagc tgcacaaccg taaaaaagcc 420
 cttctcgacg aaatggccag ggaagcggac aagaaagaac tgccaaagcg gctctga 477

<210> 1090
 <211> 158
 <212> PRT
 <213> Neisseria meningitidis

<400> 1090
 Val Gln Ser Arg Tyr Asp Gly Leu His Lys Phe Lys His Ile Cys Ser
 1 5 10 15
 Ala Ala Met Ala Leu Ile Lys Glu Pro Leu Asp Lys Ala Lys Gln Arg
 20 25 30
 Asn Glu Glu Leu Glu Ala Ala Glu Glu Ala Ala Ala Gln Glu Ala Leu
 35 40 45
 Gly Arg Glu Gln Glu Val Asp Arg Val Ser Glu Trp Glu Glu Arg Tyr
 50 55 60
 Lys Leu Ser Arg Ser Glu Phe Glu Gln Phe Trp Lys Gly Leu Pro Gln
 65 70 75 80

Thr Val Gln Asn Lys Leu Gln Ala Ser Gln Lys Thr Trp Lys Ser Gly
85 90 95

Met Asp Lys Ile Cys Ala Asn Asn Ala Lys Ala Glu Gly Glu Thr Pro
100 105 110

Asn Gly Ile Lys Phe Ser Glu Leu Ala Cys Lys Thr Ala Glu Thr Glu
115 120 125

Ala Arg Leu Glu Glu Leu His Asn Arg Lys Lys Ala Leu Leu Asp Glu
130 135 140

Met Ala Arg Glu Ala Asp Lys Lys Glu Leu Pro Lys Arg Leu
145 150 155

<210> 1091

<211> 366

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1091

atggtttggc gtgtgaattg cgcggcaacg gcggcgctga ttttttcgtc cagcccttgg 60
atttgggcggt tgggtgtgggt gtgggtcgcg tgggttttt cctgcaaacc ttgcgccagc 120
cttgacgcgt ccagtgcgcc ggcgttggcg gtttcgccgt gggactttat ccggaacacg 180
gcttcgcccc aggtgtcggc ggctttgatg cacagtttta aaaccagggc tttggggcgg 240
ttttctgcgc cgcgcgttgc cattttgctg tccaatcgcg gggttaaaaa accgttgcgc 300
tttaagtcgc cgtccgtcca agtcgatacg agcgcgcttc tttgccttcc attgcggtct 360
tcgtaa 366

<210> 1092

<211> 121

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1092

Met Val Trp Arg Val Asn Cys Ala Ala Thr Ala Ala Leu Ile Phe Ser
1 5 10 15

Ser Ser Pro Trp Ile Trp Ala Val Val Trp Val Trp Ser Arg Ser Ala
20 25 30

Phe Ser Cys Lys Pro Cys Ala Ser Leu Asp Ala Ser Ser Ala Pro Ala
35 40 45

Leu Ala Val Ser Pro Trp Asp Phe Ile Arg Asn Thr Ala Ser Pro Lys
50 55 60

Val Ser Ala Ala Leu Met His Ser Phe Lys Thr Arg Ala Leu Gly Arg
65 70 75 80

Phe Ser Ala Pro Pro Val Ala Ile Leu Leu Ser Asn Arg Gly Val Lys
85 90 95

Lys Pro Leu Ser Phe Lys Ser Pro Ser Val Gln Val Asp Thr Ser Ala

100

105

110

Leu Leu Cys Leu Ser Leu Arg Ser Ser
 115 120

<210> 1093

<211> 363

<212> DNA

<213> Neisseria meningitidis

<400> 1093

atggtttggc gtgtgaattg cgcggcaacg gcggtgctga ttttttcgtc cagcccttgg 60
 atttgggcgg cgggtgtgggt gtggtctcgg tcggctttgt cttgcaaacc ttgcgccacg 120
 tgcccgctc cagcgctgc gttgatggtt tcgcggtggg actttatcca aaacacggct 180
 tcgcccgaag tgctggcggc tttgatgcac agttttaaaa ccagggtttt ggggcggttt 240
 tcgtcgccgc ctgtcgccat tttgctgtcc gagcgcgggg ttaaaaagcc gttgtcggtt 300
 aaattttcgt ccgtccaagt cgatacgagc gcgcttctct gcctttcgtt gcggtcttcg 360
 taa 363

<210> 1094

<211> 120

<212> PRT

<213> Neisseria meningitidis

<400> 1094

Met Val Trp Arg Val Asn Cys Ala Ala Thr Ala Val Leu Ile Phe Ser
 1 5 10 15

Ser Ser Pro Trp Ile Trp Ala Ala Val Trp Val Trp Ser Arg Ser Ala
 20 25 30

Leu Ser Cys Lys Pro Cys Ala Thr Cys Pro Arg Pro Ala Pro Ala Leu
 35 40 45

Met Val Ser Pro Trp Asp Phe Ile Gln Asn Thr Ala Ser Pro Lys Val
 50 55 60

Ser Ala Ala Leu Met His Ser Phe Lys Thr Arg Ala Leu Gly Arg Phe
 65 70 75 80

Ser Ser Pro Pro Val Ala Ile Leu Leu Ser Glu Arg Gly Val Lys Lys
 85 90 95

Pro Leu Ser Phe Lys Phe Ser Ser Val Gln Val Asp Thr Ser Ala Leu
 100 105 110

Leu Cys Leu Ser Leu Arg Ser Ser
 115 120

<210> 1095

<211> 366

<212> DNA

<213> Neisseria meningitidis

<400> 1095

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atgggtttggc gtgtgaattg cgcggcaacg gcggtgctga ttttttcgtc cagcccttgg 60
atttgggcgg cggtgtgggt gtgggcgcgg tctgctttgt cttggagggt ttgcgccagc 120
gtgcccgcgt ccagcgcgcc ggcgttgacg gtttcgccgt gggactttat ccagaacacg 180
gcttcgcca aggtgtcggc ggctttgatg cacagtttta aaaccagggc tttggggcgg 240
ttttcgtcgc cgcctgtcgc cattttgctg tccgggcgcg gggttaaaaa gccgttgctg 300
tttaaatttt cgtccgtcca agtcgatacg agcgcgcttc tctgcctttc gttgtggtct 360
tcgtaa
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<210> 1096

<211> 121

<212> PRT

<213> *Neisseria meningitidis*

<400> 1096

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Met Val Trp Arg Val Asn Cys Ala Ala Thr Ala Val Leu Ile Phe Ser
  1             5             10             15

Ser Ser Pro Trp Ile Trp Ala Ala Val Trp Val Trp Ala Arg Ser Ala
      20             25             30

Leu Ser Trp Arg Phe Cys Ala Ser Val Pro Ala Ser Ser Ala Pro Ala
      35             40             45

Leu Thr Val Ser Pro Trp Asp Phe Ile Gln Asn Thr Ala Ser Pro Lys
      50             55             60

Val Ser Ala Ala Leu Met His Ser Phe Lys Thr Arg Ala Leu Gly Arg
      65             70             75             80

Phe Ser Ser Pro Pro Val Ala Ile Leu Leu Ser Gly Arg Gly Val Lys
      85             90             95

Lys Pro Leu Ser Phe Lys Phe Ser Ser Val Gln Val Asp Thr Ser Ala
      100            105            110

Leu Leu Cys Leu Ser Leu Trp Ser Ser
      115            120
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<210> 1097

<211> 423

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1097

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atgaataaaa accgcaaatt actgcttgcc gcactgctgc tgactgcctt tgccgccttc 60
aagctcgttt tgttgcaatg gtggcaggcg cagcagccgc aagccgtggc ggcgcaatgc 120
gatttgaccg agggttgcac gctgccggac ggaagccgtg tccgcgccgc cgccgtttca 180
acaaaaaac cgtttgatat ttatatcgaa cacgcgcccg ccggcacgga acaggtcagc 240
atcagcttca gtatgaaaaa tatggatatg ggtttcaacc gctatatgtt cgagcggcaa 300
ccgtcgggga cttggcaggc agcacgcac cgcctgccc tctgtgtcga aggcaggcgc 360
gattttacgg cggacattac aatcggcagc cggacatttc agacggcatt taccgccgaa 420
taa
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<210> 1098

<211> 140

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1098

Met Asn Lys Asn Arg Lys Leu Leu Leu Ala Ala Leu Leu Leu Thr Ala
1 5 10 15

Phe Ala Ala Phe Lys Leu Val Leu Leu Gln Trp Trp Gln Ala Gln Gln
20 25 30

Pro Gln Ala Val Ala Ala Gln Cys Asp Leu Thr Glu Gly Cys Thr Leu
35 40 45

Pro Asp Gly Ser Arg Val Arg Ala Ala Ala Val Ser Thr Lys Lys Pro
50 55 60

Phe Asp Ile Tyr Ile Glu His Ala Pro Ala Gly Thr Glu Gln Val Ser
65 70 75 80

Ile Ser Phe Ser Met Lys Asn Met Asp Met Gly Phe Asn Arg Tyr Met
85 90 95

Phe Glu Arg Gln Pro Ser Gly Thr Trp Gln Ala Ala Arg Ile Arg Leu
100 105 110

Pro Val Cys Val Glu Gly Arg Arg Asp Phe Thr Ala Asp Ile Thr Ile
115 120 125

Gly Ser Arg Thr Phe Gln Thr Ala Phe Thr Ala Glu
130 135 140

<210> 1099

<211> 422

<212> DNA

<213> *Neisseria meningitidis*

<400> 1099

atgaataaaa accgtaaatt actgcttgcc gcaactgctgc tgattgcctt tgccgccgtc 60
aagctcggtt tgttgcaatg gtggcaggcg cacagccgca agctgtggcg gcgcaatgcg 120
atgtgaccga gggttgcacg ctgccggacg gaagccgcgt ccgcgccgcc gccgtttcaa 180
ccaaaaaacc gtttgatatt tatatcgaac acgcgcccgc cggcacggaa caggtcagca 240
tcagcttcag tatgaaaaat atggatatgg gtttcaaccg ctatatgttc gagcggcaac 300
cgtcggggac ttggcaggca gtacgcatcc gcctgcccac ctgtgtcgaa ggcaggcgcg 360
atgttacggc ggacattaca atcggcagtc ggacatttca gacggcattt accgccgaat 420
aa 422

<210> 1100

<211> 140

<212> PRT

<213> *Neisseria meningitidis*

<400> 1100

Met Asn Lys Asn Arg Lys Leu Leu Leu Ala Ala Leu Leu Leu Ile Ala
 1 5 10 15
 Phe Ala Ala Val Lys Leu Val Leu Leu Gln Trp Trp Gln Ala Xaa Gln
 20 25 30
 Pro Gln Ala Val Ala Ala Gln Cys Asp Leu Thr Glu Gly Cys Thr Leu
 35 40 45
 Pro Asp Gly Ser Arg Val Arg Ala Ala Ala Val Ser Thr Lys Lys Pro
 50 55 60
 Phe Asp Ile Tyr Ile Glu His Ala Pro Ala Gly Thr Glu Gln Val Ser
 65 70 75 80
 Ile Ser Phe Ser Met Lys Asn Met Asp Met Gly Phe Asn Arg Tyr Met
 85 90 95
 Phe Glu Arg Gln Pro Ser Gly Thr Trp Gln Ala Val Arg Ile Arg Leu
 100 105 110
 Pro Ile Cys Val Glu Gly Arg Arg Asp Phe Thr Ala Asp Ile Thr Ile
 115 120 125
 Gly Ser Arg Thr Phe Gln Thr Ala Phe Thr Ala Glu
 130 135 140

<210> 1101
 <211> 423
 <212> DNA
 <213> Neisseria meningitidis

<400> 1101
 atgaataaaa accgtaaatt actgcttgcc gcactgctgc tgattgcctt tgccgccgtc 60
 aagctcgttt tgttgcaatg gtggcaggcg cagcagccgc aagctgtggc ggcgcaatgc 120
 gatttgaccg agggttgcac gctgccggac ggaagccgcg tccgcgcgcg cgccgtttca 180
 accaaaaaac cgtttgatat ttatatcgaa cacgcgcccg ccggcacgga acaggtcagc 240
 atcagcttca gtatgaaaaa tatggatatg ggtttcaacc gctatatgtt cgagcggcaa 300
 ccgtcgggga cttggcaggc agtacgcac cgcctgccca tctgtgtcga aggcaggcgc 360
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 taa 423

<210> 1102
 <211> 140
 <212> PRT
 <213> Neisseria meningitidis

<400> 1102
 Met Asn Lys Asn Arg Lys Leu Leu Leu Ala Ala Leu Leu Leu Ile Ala
 1 5 10 15
 Phe Ala Ala Val Lys Leu Val Leu Leu Gln Trp Trp Gln Ala Gln Gln
 20 25 30
 Pro Gln Ala Val Ala Ala Gln Cys Asp Leu Thr Glu Gly Cys Thr Leu

35

40

45

Pro Asp Gly Ser Arg Val Arg Ala Ala Ala Val Ser Thr Lys Lys Pro
 50 55 60

Phe Asp Ile Tyr Ile Glu His Ala Pro Ala Gly Thr Glu Gln Val Ser
 65 70 75 80

Ile Ser Phe Ser Met Lys Asn Met Asp Met Gly Phe Asn Arg Tyr Met
 85 90 95

Phe Glu Arg Gln Pro Ser Gly Thr Trp Gln Ala Val Arg Ile Arg Leu
 100 105 110

Pro Ile Cys Val Glu Gly Arg Arg Asp Phe Thr Ala Asp Ile Thr Ile
 115 120 125

Gly Ser Arg Thr Phe Gln Thr Ala Phe Thr Ala Glu
 130 135 140

<210> 1103

<211> 573

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1103

atgttcagtt cgcggatggc gaggatttgg gcgacggggg taacgttgtg tatggtcagt 60
 ccgtgtccgg cggtgacgac caagcccaaa tcgccggcga aatgcgcgcc gttttggatg 120
 cgctcgaact gcctgatttg ttcggcgtgg ctttgtgcgt cggcatatgc gccggtgtgc 180
 agctcgacaa cggcgcgccc gacatcacgg gcggcttgga tttgcctgtc gtcggcatcg 240
 ataaacaagg acacgcgtat gccgcgctcg gtcaggattt tggcgaattc gccgattttt 300
 tcctgttgcg ccaatacgtc caaacgcgct tcggtcgtga tttcctgcgc tttttcaggc 360
 acgatgcaca cgtcttcggy catcacttta agcgcgtttt cgagcatttc ttccgtcaac 420
 gccatttcaa gggtcaggcg cgtgcggatg gcgtttttga cggcaaatac atccgcgtct 480
 ttgatgtggc ggcggtcttc ggcgaggtgc atggtaatca ggtctgcacc gtgcgtttcg 540
 gcaaccagtg ccgcctccac ggggctggga taa 573

<210> 1104

<211> 190

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1104

Met Phe Ser Ser Arg Met Ala Arg Ile Trp Ala Thr Gly Val Thr Leu
 1 5 10 15

Cys Met Val Ser Pro Cys Pro Ala Leu Thr Thr Lys Pro Lys Ser Pro
 20 25 30

Ala Lys Cys Ala Pro Phe Trp Met Arg Ser Asn Cys Leu Ile Cys Ser
 35 40 45

Ala Trp Leu Cys Ala Ser Ala Tyr Ala Pro Val Cys Ser Ser Thr Thr
 50 55 60

Gly Ala Pro Thr Ser Arg Ala Ala Trp Ile Cys Leu Ser Ser Ala Ser
65 70 75 80

Ile Asn Lys Asp Thr Arg Met Pro Ala Ser Val Arg Ile Leu Ala Asn
85 90 95

Ser Ala Ile Phe Ser Cys Cys Ala Asn Thr Ser Lys Pro Pro Ser Val
100 105 110

Val Ile Ser Cys Arg Phe Ser Gly Thr Met His Thr Ser Ser Gly Ile
115 120 125

Thr Leu Ser Ala Phe Ser Ser Ile Ser Ser Val Asn Ala Ile Ser Arg
130 135 140

Phe Arg Arg Val Arg Met Ala Phe Leu Thr Ala Asn Thr Ser Ala Ser
145 150 155 160

Leu Met Trp Arg Arg Ser Ser Arg Arg Cys Met Val Ile Arg Ser Ala
165 170 175

Pro Cys Val Ser Ala Thr Ser Ala Ala Ser Thr Gly Leu Gly
180 185 190

<210> 1105

<211> 573

<212> DNA

<213> Neisseria meningitidis

<400> 1105

awgttcagtt cgcgatggc gaggatttgg gcgatggggg taacgttggt tatggtcagt 60
ccgtgtccgg cgttgacgac caagcccaaa tcgcggcgga aatgcgcgcc gttttggatg 120
cgctcgaact gcctgatttg ttccggcgtg ctgcgcgcgt cggcatacgc gcctgtgtgc 180
agctcgacaa cgggcgcgcc gacatcacgg gcggcttgga ttgcctgtc gtcggcatcg 240
ataaacaag acacgcgtat gcctgcgtcg gtcaggattt tgggaaccc ggcgattttt 300
tcctgttgcg ccaatacgtc caaacgcct tcggtcgtga ttccctgacg tttttcaggc 360
acgatgcaca cgtcttccgg catcactttc aaagcgttt ccaacatttc ttccgtcaac 420
gccatttcaa gggtcaggcg cgtgcggatg gcgtttttga cggcaaacac gtccgcgtct 480
ttgatgtggc ggcggtcttc gcgcaggtgc atggtaatca aatccgcacc gtgcgtttcg 540
gcaaccagtg ccgcctccac ggggctggga taa 573

<210> 1106

<211> 190

<212> PRT

<213> Neisseria meningitidis

<400> 1106

Xaa Phe Ser Ser Arg Met Ala Arg Ile Trp Ala Met Gly Val Thr Leu
1 5 10 15

Cys Met Val Ser Pro Cys Pro Ala Leu Thr Thr Lys Pro Lys Ser Pro
20 25 30

Ala Lys Cys Ala Pro Phe Trp Met Arg Ser Asn Cys Leu Ile Cys Ser
35 40 45

Ala Trp Leu Arg Ala Ser Ala Tyr Ala Pro Val Cys Ser Ser Thr Thr
50 55 60

Gly Ala Pro Thr Ser Arg Ala Ala Trp Ile Cys Leu Ser Ser Ala Ser
65 70 75 80

Ile Asn Lys Asp Thr Arg Met Pro Ala Ser Val Arg Ile Leu Val Asn
85 90 95

Pro Ala Ile Phe Ser Cys Cys Ala Asn Thr Ser Lys Pro Pro Ser Val
100 105 110

Val Ile Ser Xaa Arg Phe Ser Gly Thr Met His Thr Ser Ser Gly Ile
115 120 125

Thr Phe Lys Ala Phe Ser Asn Ile Ser Ser Val Asn Ala Ile Ser Arg
130 135 140

Phe Arg Arg Val Arg Met Ala Phe Leu Thr Ala Asn Thr Ser Ala Ser
145 150 155 160

Leu Met Trp Arg Arg Ser Ser Arg Arg Cys Met Val Ile Lys Ser Ala
165 170 175

Pro Cys Val Ser Ala Thr Ser Ala Ala Ser Thr Gly Leu Gly
180 185 190

<210> 1107

<211> 573

<212> DNA

<213> Neisseria meningitidis

<400> 1107

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ccgtgtccgg cgttgacgac caagcccaaa tcgctggcaa aatgcgcgcc gttttggatg 120
cgctcgaact gctgatttg ttccggcgtg ctgcgcgcgt cggcatacgc gcctgtgtgc 180
agctcgacaa cgggcgcgcc gacatcacgg gcggcttga ttgcctgtc gtcggcatcg 240
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tcttgttgcg ccaatacgtc caagccgcct tcggtcgtga ttctctgacg tttttccggc 360
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gccatttcaa gggtcaggcg cgtgcggatg gcgtttttga cagcaaacac gtccgcgtct 480
ttgatgtggc ggcggtcttc gcgcaggtgc atggtaatca ggtcggcacc gtgcgtttcg 540
gcaaccagtg ccgcctccac ggggctggga taa 573

<210> 1108

<211> 189

<212> PRT

<213> Neisseria meningitidis

<400> 1108

Met Phe Ser Ser Arg Met Ala Arg Ile Trp Ala Met Gly Val Thr Leu
1 5 10 15

Cys Met Val Ser Pro Cys Pro Ala Leu Thr Thr Lys Pro Lys Ser Leu

20

25

30

Ala Lys Cys Ala Pro Phe Trp Met Arg Ser Asn Cys Leu Ile Cys Ser
 35 40 45

Ala Trp Leu Arg Ala Ser Ala Tyr Ala Pro Val Cys Ser Ser Thr Thr
 50 55 60

Gly Ala Pro Thr Ser Arg Ala Ala Trp Ile Cys Leu Ser Ser Ala Ser
 65 70 75 80

Ile Asn Lys Asp Thr Arg Met Pro Ala Ser Val Arg Ile Leu Val Asn
 85 90 95

Ser Ala Ile Leu Ser Cys Cys Ala Asn Thr Ser Lys Pro Pro Ser Val
 100 105 110

Val Ile Ser Arg Phe Ser Gly Thr Met His Thr Ser Ser Gly Ile Thr
 115 120 125

Leu Ser Ala Phe Ser Ser Ile Ser Ser Val Asn Ala Ile Ser Arg Phe
 130 135 140

Arg Arg Val Arg Met Ala Phe Leu Thr Ala Asn Thr Ser Ala Ser Leu
 145 150 155 160

Met Trp Arg Arg Ser Ser Arg Arg Cys Met Val Ile Arg Ser Ala Pro
 165 170 175

Cys Val Ser Ala Thr Ser Ala Ala Ser Thr Gly Leu Gly
 180 185

<210> 1109

<211> 1113

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1109

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 gacctgtttg tgacgaccca tttcccgccc gctatgaagc tggacggcaa aatcaccgcg 120
 atcacggacg aaccgctgac ggcggaaaaa tgtatggaaa tcgccttttc gattatgagt 180
 gcgaagcagg cggaagaatt ttcacgcacc aacgagtgca atttcgccat cagcctgccg 240
 gacaccagcc gcttcgcggt caatgcgatg atacagcgcg gtgcgacggc gttggtattc 300
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 tcgacttcgc tcgcctcgct tatcgactac cgcaatgaaa attcgttcgg acacatcatc 480
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 gaggtcggcg tggacacgga aaactggatg gcggcggttg aaaatacgct gcgtcaggcg 600
 ccggatgtga tccttatcgg cgaaatccgc gaccgtgaaa caatggacta cgccatcgcc 660
 tttgccgaaa cggggcattt gtgtatggcg acgctgcacg ccaacagcac caatcaggcg 720
 ctcgaccgca tcatcaactt cttccccgag gagcggcgcg aacaattgct gacggatttg 780
 tcgctcaacc ttcaggcggt tatttcgcaa cgctcggttc cgcgagacgg cggcaaggcg 840
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 ggcaacatcc atgaaatcaa agaagtgatg aaaaaatcca ctaccctggg tatgcagacc 960
 ttcgaccaac acctttacca attgtatgaa aaaggcgaga tttccttgca ggatgccttg 1020
 aaaaatgccg attccgcaca tgatttgcgt ttggcggtac agttgcgcag ccgcagggca 1080

caaagtccg accccgattt ggaactgctc tga

1113

<210> 1110

<211> 370

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1110

Met Thr Ala Lys Glu Glu Leu Phe Ala Trp Leu Arg His Met Asn Lys
1 5 10 15
Asn Lys Gly Ser Asp Leu Phe Val Thr Thr His Phe Pro Pro Ala Met
20 25 30
Lys Leu Asp Gly Lys Ile Thr Arg Ile Thr Asp Glu Pro Leu Thr Ala
35 40 45
Glu Lys Cys Met Glu Ile Ala Phe Ser Ile Met Ser Ala Lys Gln Ala
50 55 60
Glu Glu Phe Ser Ser Thr Asn Glu Cys Asn Phe Ala Ile Ser Leu Pro
65 70 75 80
Asp Thr Ser Arg Phe Arg Val Asn Ala Met Ile Gln Arg Gly Ala Thr
85 90 95
Ala Leu Val Phe Arg Ala Ile Thr Ser Lys Ile Pro Lys Phe Glu Ser
100 105 110
Leu Asn Leu Pro Pro Ala Leu Lys Asp Val Ala Leu Lys Lys Arg Gly
115 120 125
Leu Val Ile Phe Val Gly Gly Thr Gly Ser Gly Lys Ser Thr Ser Leu
130 135 140
Ala Ser Leu Ile Asp Tyr Arg Asn Glu Asn Ser Phe Gly His Ile Ile
145 150 155 160
Thr Ile Glu Asp Pro Ile Glu Phe Val His Glu His Lys Asn Cys Ile
165 170 175
Ile Thr Gln Arg Glu Val Gly Val Asp Thr Glu Asn Trp Met Ala Ala
180 185 190
Leu Lys Asn Thr Leu Arg Gln Ala Pro Asp Val Ile Leu Ile Gly Glu
195 200 205
Ile Arg Asp Arg Glu Thr Met Asp Tyr Ala Ile Ala Phe Ala Glu Thr
210 215 220
Gly His Leu Cys Met Ala Thr Leu His Ala Asn Ser Thr Asn Gln Ala
225 230 235 240
Leu Asp Arg Ile Ile Asn Phe Phe Pro Glu Glu Arg Arg Glu Gln Leu
245 250 255

Leu Thr Asp Leu Ser Leu Asn Leu Gln Ala Phe Ile Ser Gln Arg Leu
260 265 270

Val Pro Arg Asp Gly Gly Lys Gly Arg Val Ala Ala Val Glu Val Leu
275 280 285

Leu Asn Ser Pro Leu Ile Ser Glu Leu Ile His Asn Gly Asn Ile His
290 295 300

Glu Ile Lys Glu Val Met Lys Lys Ser Thr Thr Leu Gly Met Gln Thr
305 310 315 320

Phe Asp Gln His Leu Tyr Gln Leu Tyr Glu Lys Gly Glu Ile Ser Leu
325 330 335

Gln Asp Ala Leu Lys Asn Ala Asp Ser Ala His Asp Leu Arg Leu Ala
340 345 350

Val Gln Leu Arg Ser Arg Arg Ala Gln Ser Ser Asp Pro Asp Leu Glu
355 360 365

Leu Leu
.370

<210> 1111

<211> 1113

<212> DNA

<213> Neisseria meningitidis

<400> 1111

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atcacggacg aaccgctgac ggcggaaaaa tgtatggaaa tcgccttttc gattatgagt 180
gcgaagcagg cggaagaatt ttcacgcacc aacgagtgca acttcgccat cagcctgccg 240
gacaccagcc gcttccgcgt caatgcgatg atacagcgcg gcgcgacggc gttggtattc 300
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tcgacttcgc ttgcctcgct tatcgactac cgcaatgaaa attcgttcgg acacatcatc 480
accatcgaag acccgatcga gtttgtccac gaacacaaaa actgcatcat caccagcg 540
gaggtcggcg tggatacgga aaactggatg gcggcggtga aaaacacgct gcgtcaggcg 600
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tttgccgaaa cggggcattt gtgtatggcg acgctgcacg ccaacagcac caatcaggca 720
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ttcgatcaac acctttacca attgtatgaa aaaggcgata tttccctgca agaagcattg 1020
aaaaatgccg attccgcaca cgatttgctt ttggcggtac agttgcgcag ccgccgcgcg 1080
caaagttyca gccccgattt ggnactgctc tga 1113
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<210> 1112

<211> 370

<212> PRT

<213> Neisseria meningitidis

<400> 1112

Met Thr Ala Lys Glu Glu Leu Phe Ala Trp Leu Arg His Met Xaa Gln
1 5 10 15

Asn Lys Gly Ser Asp Leu Phe Val Thr Thr His Phe Pro Pro Ala Met
20 25 30

Lys Leu Asp Gly Lys Ile Thr Arg Ile Thr Asp Glu Pro Leu Thr Ala
35 40 45

Glu Lys Cys Met Glu Ile Ala Phe Ser Ile Met Ser Ala Lys Gln Ala
50 55 60

Glu Glu Phe Ser Ser Thr Asn Glu Cys Asn Phe Ala Ile Ser Leu Pro
65 70 75 80

Asp Thr Ser Arg Phe Arg Val Asn Ala Met Ile Gln Arg Gly Ala Thr
85 90 95

Ala Leu Val Phe Arg Thr Ile Thr Ser Lys Ile Pro Lys Phe Glu Ser
100 105 110

Leu Asn Leu Pro Pro Val Leu Lys Asp Val Ala Leu Lys Lys Arg Gly
115 120 125

Leu Val Ile Phe Val Gly Gly Thr Gly Ser Gly Lys Ser Thr Ser Leu
130 135 140

Ala Ser Leu Ile Asp Tyr Arg Asn Glu Asn Ser Phe Gly His Ile Ile
145 150 155 160

Thr Ile Glu Asp Pro Ile Glu Phe Val His Glu His Lys Asn Cys Ile
165 170 175

Ile Thr Gln Arg Glu Val Gly Val Asp Thr Glu Asn Trp Met Ala Ala
180 185 190

Leu Lys Asn Thr Leu Arg Gln Ala Pro Asp Val Ile Leu Ile Gly Glu
195 200 205

Ile Arg Asp Arg Glu Thr Met Asp Tyr Ala Ile Ala Phe Ala Glu Thr
210 215 220

Gly His Leu Cys Met Ala Thr Leu His Ala Asn Ser Thr Asn Gln Ala
225 230 235 240

Leu Asp Arg Ile Ile Asn Phe Phe Pro Glu Glu Arg Arg Glu Gln Leu
245 250 255

Leu Thr Asp Leu Ser Leu Asn Leu Gln Ala Phe Ile Ser Gln Arg Leu
260 265 270

Val Pro Arg Asp Gly Gly Lys Gly Arg Val Ala Ala Val Glu Val Leu
275 280 285

Leu Asn Ser Pro Leu Ile Ser Glu Leu Ile His Asn Gly Asn Ile His

290

295

300

Glu Ile Lys Glu Val Met Lys Lys Ser Thr Thr Leu Gly Met Gln Thr
305 310 315 320

Phe Asp Gln His Leu Tyr Gln Leu Tyr Glu Lys Gly Asp Ile Ser Leu
325 330 335

Gln Glu Ala Leu Lys Asn Ala Asp Ser Ala His Asp Leu Arg Leu Ala
340 345 350

Val Gln Leu Arg Ser Arg Arg Ala Gln Ser Xaa Ser Pro Asp Leu Xaa
355 360 365

Leu Leu
370

<210> 1113

<211> 1113

<212> DNA

<213> Neisseria meningitidis

<400> 1113

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gcgaagcagg cggaagaatt ttcattcgacc aacgagtgca acttcgccat cagtctgccg 240
gacaccagcc gcttcgcggt caatgcgatg atacagcgcg gtgcgacggc gttgggtattc 300
cgtgcgatta ccagcaagat tcccaagttt gaaagcctga acctgccgcc ggtcttgaag 360
gatgtcgcgc tgaaaaaacg cgggctgggt atttttgtcg gcggcaccgg ctcgggcaaa 420
tcgacttcgc ttgcctcgct tatcgactac cgcaatgaaa attcgttcgg acacatcatc 480
accatcgaag acccgatcga gtttgtccac gaacacaaaa actgcatcat caccagcgcg 540
gaggtcggcg tggatacgga aaactggatg gcggcggtga aaaacacgct gcgtcaggca 600
ccggtatgtga ttctgatcgg cgaaatccgc gaccgcgaaa caatggacta cgccattgct 660
tttgccgaaa cggggcattt gtgtatggcg acgctgcacg ccaacagcac caatcaggca 720
ctcgaccgca tcatcaactt tttcccgcgag gagcggcgcg aacaattgct gacggatttg 780
tcgctcaacc ttcaggcatt tatttcgcaa cgctcgttc cgcgagacgg cggcaagggc 840
aggggtggcg gactgcaggt gctgctcaat tcgccctga tttcgagtt gattcacaac 900
ggcaatatcc atgaaatcaa agaagtgatg aaaaaatcca ctaccctggg tatgcagact 960
ttcgaccaac acctttacca attgtatgaa aaaggcgaga tttccttgca ggatgccttg 1020
aaaaatgccg attccgcaca cgatttgctg ttggcggtac agttgcgcag ccgccaggcg 1080
caaagtccg gtcccgatit ggaactgctc tga 1113

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<210> 1114

<211> 370

<212> PRT

<213> Neisseria meningitidis

<400> 1114

Met Thr Ala Lys Glu Glu Leu Phe Ala Trp Leu Arg His Met Asn Lys
1 5 10 15

Asn Lys Gly Ser Asp Leu Phe Val Thr His Phe Pro Pro Ala Met
20 25 30

Lys Leu Asp Gly Lys Ile Thr Arg Ile Thr Asp Glu Pro Leu Thr Ala
 35 40 45
 Glu Lys Cys Met Glu Ile Ala Phe Ser Ile Met Ser Ala Lys Gln Ala
 50 55 60
 Glu Glu Phe Ser Ser Thr Asn Glu Cys Asn Phe Ala Ile Ser Leu Pro
 65 70 75 80
 Asp Thr Ser Arg Phe Arg Val Asn Ala Met Ile Gln Arg Gly Ala Thr
 85 90 95
 Ala Leu Val Phe Arg Ala Ile Thr Ser Lys Ile Pro Lys Phe Glu Ser
 100 105 110
 Leu Asn Leu Pro Pro Val Leu Lys Asp Val Ala Leu Lys Lys Arg Gly
 115 120 125
 Leu Val Ile Phe Val Gly Gly Thr Gly Ser Gly Lys Ser Thr Ser Leu
 130 135 140
 Ala Ser Leu Ile Asp Tyr Arg Asn Glu Asn Ser Phe Gly His Ile Ile
 145 150 155 160
 Thr Ile Glu Asp Pro Ile Glu Phe Val His Glu His Lys Asn Cys Ile
 165 170 175
 Ile Thr Gln Arg Glu Val Gly Val Asp Thr Glu Asn Trp Met Ala Ala
 180 185 190
 Leu Lys Asn Thr Leu Arg Gln Ala Pro Asp Val Ile Leu Ile Gly Glu
 195 200 205
 Ile Arg Asp Arg Glu Thr Met Asp Tyr Ala Ile Ala Phe Ala Glu Thr
 210 215 220
 Gly His Leu Cys Met Ala Thr Leu His Ala Asn Ser Thr Asn Gln Ala
 225 230 235 240
 Leu Asp Arg Ile Ile Asn Phe Phe Pro Glu Glu Arg Arg Glu Gln Leu
 245 250 255
 Leu Thr Asp Leu Ser Leu Asn Leu Gln Ala Phe Ile Ser Gln Arg Leu
 260 265 270
 Val Pro Arg Asp Gly Gly Lys Gly Arg Val Ala Ala Val Glu Val Leu
 275 280 285
 Leu Asn Ser Pro Leu Ile Ser Glu Leu Ile His Asn Gly Asn Ile His
 290 295 300
 Glu Ile Lys Glu Val Met Lys Lys Ser Thr Thr Leu Gly Met Gln Thr
 305 310 315 320
 Phe Asp Gln His Leu Tyr Gln Leu Tyr Glu Lys Gly Glu Ile Ser Leu
 325 330 335

Gln Asp Ala Leu Lys Asn Ala Asp Ser Ala His Asp Leu Arg Leu Ala
340 345 350

Val Gln Leu Arg Ser Arg Gln Ala Gln Ser Ser Gly Pro Asp Leu Glu
355 360 365

Leu Leu
370

<210> 1115

<211> 516

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1115

atgagtcttc aggcggtatt tatatacccc ccaagccgta ccgcacaata caacgaaaat 60
caggaaaacg gcggtaaagc tcataaacag ggacaaagcg gcaaacacac cgaccgccgt 120
caggatatag gcgtattcga ggccgggaact ccattcaccg ttttcctgcc gtttcttgtc 180
gcttttgaaa taaaggatga tgccgggcaag cagcgcggca gccgcgcccg acattggcat 240
tgtgttcatt gttgttcctt aacggttaaa aaccgcgccg gccgtgcaac cgttttaagg 300
cgggaaattg caaaatttgt ttgcggggcg gtgccgctga aatcaaggcg gtttgagaag 360
tgtttccnac gcgcccgcgc tatgtgccga aatattatgt gtcgctcacc tgcaaaatcg 420
ccaagaacgc gctttgcgga atttcacagt tgcccacttg tttcatacgg cgtttgcctg 480
ctttttgttt ttcaagcagt tttttcttac gcgtaa 516

<210> 1116

<211> 171

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1116

Met Ser Leu Gln Ala Val Phe Ile Tyr Pro Pro Ser Arg Thr Ala Gln
1 5 10 15

Tyr Asn Glu Asn Gln Glu Asn Gly Gly Lys Ala His Lys Gln Gly Gln
20 25 30

Ser Gly Lys His Thr Asp Arg Arg Gln Asp Ile Gly Val Phe Glu Ala
35 40 45

Gly Thr Pro Phe Thr Val Phe Leu Pro Phe Leu Val Ala Phe Glu Ile
50 55 60

Lys Asp Asp Ala Gly Lys Gln Arg Gly Ser Arg Ala Arg His Trp His
65 70 75 80

Cys Val His Cys Cys Ser Leu Thr Val Lys Asn Pro Pro Gly Arg Ala
85 90 95

Thr Val Leu Arg Arg Glu Ile Ala Lys Phe Val Cys Gly Arg Val Pro
100 105 110

Leu Lys Ser Arg Arg Phe Glu Lys Cys Phe Xaa Arg Ala Arg Pro Met
115 120 125

Cys Arg Asn Ile Ile Cys Arg Ser Pro Ala Lys Ser Pro Arg Thr Arg
130 135 140

Phe Ala Glu Phe Pro Arg Cys Pro Leu Val Ser Tyr Gly Val Cys Leu
145 150 155 160

Leu Phe Val Phe Gln Ala Val Phe Ser Tyr Ala
165 170

<210> 1117
<211> 513
<212> DNA
<213> Neisseria meningitidis

<400> 1117
atgagtcttc aggcggtatt tatatacccm ccaagccgta ccgcacaata caacgaaaat 60
caggaaaacg gcggtaaagc tcayaaacag ggacaaagcg gcaaacacgc cgaccgctgt 120
caggatatag gcgtattcaa ggccggaact ccattccccg ttttcctgcc gcttcttgtc 180
gcttttgaaa taaaggatga tgccggcaag cagcgcggca gccgcgcccg acattagcat 240
tgtgttcatt gttgttcctt aatgcttaaa aaccgcctg tccgtgcaac cgttttaagg 300
cggcaaattg caaaatttgt ttgcgggcgc gtgcccctga aatcagggcg gtttgagggg 360
tgttcccgac gcgcgcgcct gtgtgccgga gttatttgtc gtcacctgc aaaatcgcca 420
agaacgcgct ttgcggaatt tccacattgc ccacttgttt catacggcgt ttacctgcct 480
tttgtktwtc aagcagtttt ttcttacgcg taa 513

<210> 1118
<211> 169
<212> PRT
<213> Neisseria meningitidis

<400> 1118
Met Ser Leu Gln Ala Val Phe Ile Tyr Pro Pro Ser Arg Thr Ala Gln
1 5 10 15
Tyr Asn Glu Asn Gln Glu Asn Gly Gly Lys Ala His Lys Gln Gly Gln
20 25 30
Ser Gly Lys His Ala Asp Arg Cys Gln Asp Ile Gly Val Phe Lys Ala
35 40 45
Gly Thr Pro Phe Pro Val Phe Leu Pro Leu Leu Val Ala Phe Glu Ile
50 55 60
Lys Asp Asp Ala Gly Lys Gln Arg Gly Ser Arg Ala Arg His His Cys
65 70 75 80
Val His Cys Cys Ser Leu Met Leu Lys Asn Pro Pro Val Arg Ala Thr
85 90 95
Val Leu Arg Arg Gln Ile Ala Lys Phe Val Cys Gly Arg Val Pro Leu
100 105 110
Lys Ser Gly Arg Phe Glu Gly Cys Ser Arg Arg Ala Ala Leu Cys Ala
115 120 125

Gly Val Ile Cys Arg Ser Pro Ala Lys Ser Pro Arg Thr Arg Phe Ala
130 135 140

Glu Phe Pro His Cys Pro Leu Val Ser Tyr Gly Val Tyr Leu Pro Phe
145 150 155 160

Val Xaa Gln Ala Val Phe Ser Tyr Ala
165

<210> 1119

<211> 513

<212> DNA

<213> Neisseria meningitidis

<400> 1119

atgagtcttc aggcggtatt tgtatacccc ccaagccgta ccgcacaata caacgaaaat 60
caggaaaacg gcggtaaagc tcataaacag ggacaaagcg gcaaacacgc cgaccgccgt 120
caggatatag gcgtattcca gaccggaact ccattcaccg ttttcctgcc gctttttgtc 180
gcttttgaaa taaaggatga tgccggcaag cagcgcggca gccgcgccc acattagcat 240
aatgttcatt gttgttcctt aacggttaaa aaccgcccc tccgtgcaac cgtttttaag 300
aggcggtaaa tcacaaagtt tgttggcgga cgtgctctct tacaatcagg gcggtttaag 360
gggcatgatg cactgccccg tgtgccggat attatttgtc gctcacctgc aaaattgcc 420
agaacgcgct ttgcgggatt tccacattgc ccacttgttt catacggcgt ttgcctgctt 480
tttgtttttc aagcagtttt ttcttacgcg taa 513

<210> 1120

<211> 168

<212> PRT

<213> Neisseria meningitidis

<400> 1120

Met Ser Leu Gln Ala Val Phe Val Tyr Pro Pro Ser Arg Thr Ala Gln
1 5 10 15

Tyr Asn Glu Asn Gln Glu Asn Gly Gly Lys Ala His Lys Gln Gly Gln
20 25 30

Ser Gly Lys His Ala Asp Arg Arg Gln Asp Ile Gly Val Phe Gln Thr
35 40 45

Gly Thr Pro Phe Thr Val Phe Leu Pro Leu Phe Val Ala Phe Glu Ile
50 55 60

Lys Asp Asp Ala Gly Lys Gln Arg Gly Ser Arg Ala Arg His His Asn
65 70 75 80

Val His Cys Cys Ser Leu Thr Val Lys Asn Pro Pro Val Arg Ala Thr
85 90 95

Val Phe Lys Arg Arg Ile Thr Lys Phe Val Gly Gly Arg Ala Leu Leu
100 105 110

Gln Ser Gly Arg Phe Lys Gly His Asp Ala Leu Pro Arg Val Pro Asp
115 120 125

Ile Ile Cys Arg Ser Pro Ala Lys Leu Pro Arg Thr Arg Phe Ala Gly
130 135 140

Phe Pro His Cys Pro Leu Val Ser Tyr Gly Val Cys Leu Leu Phe Val
145 150 155 160

Phe Gln Ala Val Phe Ser Tyr Ala
165

<210> 1121

<211> 492

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1121

atggcggggc cgatttttgt cgtcatcgcc agcgtcgcta tgttttttgt cgcgcgagcag 60
cacgcgacag atttggttac ggacgattat tataaggatg gcaagcatat cgacatccag 120
cttcatcggg atgaagaagc cgtcagacgg catatcgggg tgcaggtcct catttctccc 180
gatatgaatg cggcaaaagt gtttgcggc ggcgagtttg acggcaaaca gcctttgaac 240
ctgctgctga tgcacccgac ccgcaaggcg gacgatcaaa ccgtcgccct caagcccgtc 300
ggcagcgcg cagaacggcag ggcggaatat gaggcggtgt tcaaaacct tccgccggcc 360
aaccactggt atgtgcgcgt ggaggacgcg gcaggcggtgt ggcgcgctga gaacaaatgg 420
attaccagcc agggcaatgc ggtcgatttg accccgatgg acaaactttt caataatgca 480
ggaagcaaat aa 492

<210> 1122

<211> 163

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1122

Met Ala Gly Pro Ile Phe Val Val Ile Ala Ser Val Ala Met Phe Phe
1 5 10 15

Val Ala Gln Gln His Ala Thr Asp Leu Val Thr Asp Asp Tyr Tyr Lys
20 25 30

Asp Gly Lys His Ile Asp Ile Gln Leu His Arg Asp Glu Glu Ala Val
35 40 45

Arg Arg His Ile Gly Val Gln Val Leu Ile Ser Pro Asp Met Asn Ala
50 55 60

Ala Lys Val Phe Val Gly Gly Glu Phe Asp Gly Lys Gln Pro Leu Asn
65 70 75 80

Leu Leu Leu Met His Pro Thr Arg Lys Ala Asp Asp Gln Thr Val Ala
85 90 95

Leu Lys Pro Val Gly Ser Ala Gln Asn Gly Arg Ala Glu Tyr Glu Ala
100 105 110

Val Phe Lys Thr Leu Pro Pro Ala Asn His Trp Tyr Val Arg Val Glu
115 120 125

Asp Ala Ala Gly Val Trp Arg Val Glu Asn Lys Trp Ile Thr Ser Gln
 130 135 140

Gly Asn Ala Val Asp Leu Thr Pro Met Asp Lys Leu Phe Asn Asn Ala
 145 150 155 160

Gly Ser Lys

<210> 1123
 <211> 492
 <212> DNA
 <213> Neisseria meningitidis

<400> 1123
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 cacgcgacag atttggttac ggacgattat tataaagacg gcaaacatat cgacatccag 120
 cttcatcggg atgaagaagc cgtcagacgg catatcgggg tgcaggttct catttcccc 180
 gatatgaatg cggcaaaagt gtttgtcggc ggcgagtttg acggcaaaca gcctttgaac 240
 ctgctgctga tgcacccgac ccgcaaggcg gacgatcaaa ccgtcgccct caagcccgtc 300
 ggcagcgcgc agaacggcag ggcggaatat gaggcggtgt tcaaaaccct ttgcgcgacc 360
 aaccactggt atgtgcgcgt ggaggacgcg gcaggcggtgt ggcgcgctcga gaacaaatgg 420
 attaccagcc aaggcaatgc ggtcgaatttg accccgatgg acaagctttt caataatact 480
 gaaagcaaat aa 492

<210> 1124
 <211> 163
 <212> PRT
 <213> Neisseria meningitidis

<400> 1124
 Met Ala Gly Pro Ile Phe Val Val Ile Ala Ser Val Ala Met Phe Phe
 1 5 10 15
 Val Ala Gln Gln His Ala Thr Asp Leu Val Thr Asp Asp Tyr Tyr Lys
 20 25 30
 Asp Gly Lys His Ile Asp Ile Gln Leu His Arg Asp Glu Glu Ala Val
 35 40 45
 Arg Arg His Ile Gly Val Gln Val Leu Ile Ser Pro Asp Met Asn Ala
 50 55 60
 Ala Lys Val Phe Val Gly Gly Glu Phe Asp Gly Lys Gln Pro Leu Asn
 65 70 75 80
 Leu Leu Leu Met His Pro Thr Arg Lys Ala Asp Asp Gln Thr Val Ala
 85 90 95
 Leu Lys Pro Val Gly Ser Ala Gln Asn Gly Arg Ala Glu Tyr Glu Ala
 100 105 110
 Val Phe Lys Thr Leu Ser Pro Thr Asn His Trp Tyr Val Arg Val Glu
 115 120 125

Asp Ala Ala Gly Val Trp Arg Val Glu Asn Lys Trp Ile Thr Ser Gln
130 135 140

Gly Asn Ala Val Asp Leu Thr Pro Met Asp Lys Leu Phe Asn Asn Thr
145 150 155 160

Glu Ser Lys

<210> 1125

<211> 492

<212> DNA

<213> Neisseria meningitidis

<400> 1125

atggcggggc cgatttttgt cgtcatcgcc agcgtcgcta tgttttttgt cgcgcagcag 60
cacgcgacag atttggttac ggacgattat tataaagacg gcaagcatat cgacatccag 120
cttcatcggg atgaagaagc cgtcagacgg catatcgggg tgcaggttct catttcccc 180
gatatgaatg cggcaaaagt gtttgtcggc ggcgagtttg acggcaaaca gcctttgaac 240
ctgctgctga tgcacccgac ccgcaaggcg gacgatcaaa ccgtcgccct caagcccgtc 300
ggcagcgcg cagaacggcag ggcggaatat gaggcggtgt tcaaaaccct ttcgccgacc 360
aaccactggt atgtgcgcgt ggaggacgcg gcaggcgtgt ggcgcgtcga gaacaaatgg 420
attaccagcc aaggcaatgc ggtcgatttg accccgatgg acaaactttt caataatact 480
gaaagcaaat aa 492

<210> 1126

<211> 163

<212> PRT

<213> Neisseria meningitidis

<400> 1126

Met Ala Gly Pro Ile Phe Val Val Ile Ala Ser Val Ala Met Phe Phe
1 5 10 15

Val Ala Gln Gln His Ala Thr Asp Leu Val Thr Asp Asp Tyr Tyr Lys
20 25 30

Asp Gly Lys His Ile Asp Ile Gln Leu His Arg Asp Glu Glu Ala Val
35 40 45

Arg Arg His Ile Gly Val Gln Val Leu Ile Ser Pro Asp Met Asn Ala
50 55 60

Ala Lys Val Phe Val Gly Gly Glu Phe Asp Gly Lys Gln Pro Leu Asn
65 70 75 80

Leu Leu Leu Met His Pro Thr Arg Lys Ala Asp Asp Gln Thr Val Ala
85 90 95

Leu Lys Pro Val Gly Ser Ala Gln Asn Gly Arg Ala Glu Tyr Glu Ala
100 105 110

Val Phe Lys Thr Leu Ser Pro Thr Asn His Trp Tyr Val Arg Val Glu
115 120 125

Asp Ala Ala Gly Val Trp Arg Val Glu Asn Lys Trp Ile Thr Ser Gln
 130 135 140

Gly Asn Ala Val Asp Leu Thr Pro Met Asp Lys Leu Phe Asn Asn Thr
 145 150 155 160

Glu Ser Lys

<210> 1127

<211> 837

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1127

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atgattttgc cgccatccat gacgatgatg cggtcggcgg attcgacggt ggtcaggcgg 60
tgggcgacga tgatgccggt gcggttttcc atcaggcggt cgagcgcttg ttggacgagg 120
cgttcggatt cgttgtccaa tgcgctggtg gcttcgtcca ataataatat cggcgcgtct 180
ttcaaaatgg cgcgggcgat ggcgacgcgt tgccgctgtc cgccggataa gttgctgccg 240
ttcgatccga tgggctggtg cagtccgagc ggggatgcgt cgatcaggct ttgcaggttg 300
gcggtttgga gggcggacag gacttcggct tcgcccgcgt cgggacggct gtatcggaag 360
ttttcaaaca ggggtgctgc aaacaggaat acgtcttggg agacgagggc gaattgggag 420
cgcaggcagt cgagtttgat gtcggcgatg tcgataccgt ctatgcagat gttgccggca 480
gacggttcga caaagcgggg cagaagggtg acgacgggtg atttgccgct gccggaacgt 540
ccgaccaggg cgacgcgttc gccttgctctg atgtcgaggt tgaagttgtc gagggctttg 600
atgccgtctg aacgggtattc gacatcgacg ttgcggaagc tgatgcgccc ttcgacacgc 660
tgcggcgcga gcgtgccttt gtcctgttcg ggcgggggtg cgagaaatgc acatacgccg 720
tcggcggcga ggaacatcgt ctgcataagg atgctgatgt tggcaaggct tttgatgggg 780
gcgtacattt gcagcatcgc gacgatgaat gccataaatt cgccgatggt ggtgtag 837

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<210> 1128

<211> 278

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1128

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Met Ile Leu Pro Pro Ser Met Thr Met Met Arg Ser Ala Asp Ser Thr
  1             5             10             15

Val Val Arg Arg Trp Ala Thr Met Met Pro Val Arg Phe Ser Ile Arg
      20             25             30

Arg Ser Ser Ala Cys Trp Thr Arg Arg Ser Asp Ser Leu Ser Asn Ala
      35             40             45

Leu Val Ala Ser Ser Asn Asn Asn Ile Gly Ala Ser Phe Lys Met Ala
      50             55             60

Arg Ala Met Ala Thr Arg Cys Arg Cys Pro Pro Asp Lys Leu Leu Pro
      65             70             75             80

Phe Asp Pro Met Gly Trp Cys Ser Pro Ser Gly Asp Ala Ser Ile Arg
      85             90             95

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Leu Cys Arg Leu Ala Ala Trp Arg Ala Asp Arg Thr Ser Ala Ser Pro
 100 105 110
 Ala Ser Gly Arg Leu Tyr Arg Thr Phe Ser Asn Arg Val Ser Ser Asn
 115 120 125
 Arg Asn Thr Ser Trp Glu Thr Arg Ala Asn Trp Ala Arg Arg Gln Ser
 130 135 140
 Ser Leu Met Ser Ala Met Ser Ile Pro Ser Met Gln Met Leu Pro Ala
 145 150 155 160
 Asp Gly Ser Thr Lys Arg Gly Arg Arg Leu Thr Thr Val Asp Leu Pro
 165 170 175
 Leu Pro Glu Arg Pro Thr Arg Ala Thr Arg Ser Pro Cys Leu Met Ser
 180 185 190
 Arg Leu Lys Leu Ser Arg Ala Leu Met Pro Ser Glu Arg Tyr Ser Thr
 195 200 205
 Ser Thr Leu Arg Lys Leu Met Arg Pro Ser Thr Arg Cys Gly Ala Ser
 210 215 220
 Val Pro Leu Ser Cys Ser Gly Gly Val Ser Arg Asn Ala His Thr Pro
 225 230 235 240
 Ser Ala Ala Arg Asn Ile Val Cys Ile Gly Met Leu Met Leu Ala Arg
 245 250 255
 Leu Leu Met Gly Ala Tyr Ile Cys Ser Ile Ala Thr Met Asn Ala Ile
 260 265 270
 Asn Ser Pro Met Val Val
 275

<210> 1129

<211> 837

<212> DNA

<213> Neisseria meningitidis

<400> 1129

atgattttgc cgctcgtccat cacgatgatg cggtcggccc ctctgatggt ggtcaggcgg 60
 tgggcgacga tgatgccggt gcggttttcc atcaggcggt cgagcgctg ttggacgagg 120
 cgttcggatt cgttgtctaa tgcgctggtg gcttcgtcca ataataatat cggcgcgtct 180
 ttcaaaatgg cgcgggcaat ggcgacgcgt tgccgctgtc cgccggataa gttgctgccg 240
 ttcatccga tgggctggtg cagtccgagc ggggagctgt caatcaggct ttgcaggttg 300
 gcggtttgga gggcgaacag gacttcggct tcgcccgcgt cgggacggct gtatcggacg 360
 ttttcaaaca ggggtgctgc aaacaggaat acgtcttggg agacgagggc gaattgggcg 420
 cgcaggcagt cgagtttgat gtcggcgatg tcgataccgt ctatgcagat gttgccggca 480
 gacggttcga caaagcgggg cagcagggtg acgacgggtg atttgccgct gccggaacgt 540
 ccgaccaggg cgacgcgttc gccttgtctg atgtcgaggt tgaagttgtc gagggctttg 600
 atgccgtctg aacgggtattc gacatcgacg ttgcggaagc tgatgcgccc ttcgacacgc 660
 tgcggtgcga gcgtgccctt gtccgtgttcg ggccggggtg cgagaaatgc acatacaccg 720
 tcggcggcga ggaacatcgt ctgcataggg atgctgatgt tggcaaggct tttgatgggg 780
 gcgtacattt gcagcatcgc gacgatgaat gccataaatt cgccgatggt ggtgtag 837

<210> 1130

<211> 278

<212> PRT

<213> *Neisseria meningitidis*

<400> 1130

Met Ile Leu Pro Ser Ser Ile Thr Met Met Arg Ser Ala Pro Ser Met
1 5 10 15

Val Val Arg Arg Trp Ala Thr Met Met Pro Val Arg Phe Ser Ile Arg
20 25 30

Arg Ser Ser Ala Cys Trp Thr Arg Arg Ser Asp Ser Leu Ser Asn Ala
35 40 45

Leu Val Ala Ser Ser Asn Asn Asn Ile Gly Ala Ser Phe Lys Met Ala
50 55 60

Arg Ala Met Ala Thr Arg Cys Arg Cys Pro Pro Asp Lys Leu Leu Pro
65 70 75 80

Phe Asp Pro Met Gly Trp Cys Ser Pro Ser Gly Glu Leu Ser Ile Arg
85 90 95

Leu Cys Arg Leu Ala Val Trp Arg Ala Asn Arg Thr Ser Ala Ser Pro
100 105 110

Ala Ser Gly Arg Leu Tyr Arg Thr Phe Ser Asn Arg Val Ser Ser Asn
115 120 125

Arg Asn Thr Ser Trp Glu Thr Arg Ala Asn Trp Ala Arg Arg Gln Ser
130 135 140

Ser Leu Met Ser Ala Met Ser Ile Pro Ser Met Gln Met Leu Pro Ala
145 150 155 160

Asp Gly Ser Thr Lys Arg Gly Ser Arg Leu Thr Thr Val Asp Leu Pro
165 170 175

Leu Pro Glu Arg Pro Thr Arg Ala Thr Arg Ser Pro Cys Leu Met Ser
180 185 190

Arg Leu Lys Leu Ser Arg Ala Leu Met Pro Ser Glu Arg Tyr Ser Thr
195 200 205

Ser Thr Leu Arg Lys Leu Met Arg Pro Ser Thr Arg Cys Gly Ala Ser
210 215 220

Val Pro Leu Ser Cys Ser Gly Gly Val Ser Arg Asn Ala His Thr Pro
225 230 235 240

Ser Ala Ala Arg Asn Ile Val Cys Ile Gly Met Leu Met Leu Ala Arg
245 250 255

Leu Leu Met Gly Ala Tyr Ile Cys Ser Ile Ala Thr Met Asn Ala Ile

260

265

270

Asn Ser Pro Met Val Val
275

<210> 1131

<211> 837

<212> DNA

<213> Neisseria meningitidis

<400> 1131

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tgggcgacga tgatgccggg gcggttttcc atcaggcggt cgagcgctg ttggacgagg 120
cgttcggatt cgttgtccaa tgcgctgggt gcttcgtcca ataataatat cggcgcgtct 180
ttcaaaatgg cgcgggcaat ggcaacgcgt tgccgctgtc cgccggataa gttgctgccg 240
ttcgatccga tgggctgggt cagtccgagc ggtgatgcgt cgatcaggct ttgcaggtta 300
gcggcttgga gggcggatag gacttcgggt tcgcccgcgt cgggacggct atatcggaag 360
ttttcaaaca ggggtgtcgt aaacaggaat acgtcttggg agacgagggc aaattgggag 420
cgcaggcagt cgagtttgat gtcggcgatg tcgataccgt ctatgcagat gttgccggca 480
gacggttcga caaagcgggg cagcagggtg acgacgggtg atttgccgct gccggaacgt 540
ccgaccaggg cgacgcgttc gccttgtctg atgtcgaggt tgaagccgtc gagggctttg 600
atgccgtccg aacgggtattc gacatcgacg ttgcggaagc tgatgcgccc ttcgacacgc 660
tgcggtgcga gcgtgccttt gtccgtgtcg ggcgggggtg cgagaaatgc acatacgccg 720
tcggcggcga ggaacatcgt ctgcataggg atgctaagt tggcaaggct tttgatgggg 780
gcgtacattt gcagcatcgc gacgatgaat gccataaatt cgccgatggt ggtgtag 837

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<210> 1132

<211> 278

<212> PRT

<213> Neisseria meningitidis

<400> 1132

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Met Ile Leu Pro Ser Ser Ile Thr Met Met Arg Ser Ala Pro Ser Met
  1             5             10             15

Val Val Arg Arg Trp Ala Thr Met Met Pro Val Arg Phe Ser Ile Arg
      20             25             30

Arg Ser Ser Ala Cys Trp Thr Arg Arg Ser Asp Ser Leu Ser Asn Ala
      35             40             45

Leu Val Ala Ser Ser Asn Asn Asn Ile Gly Ala Ser Phe Lys Met Ala
      50             55             60

Arg Ala Met Ala Thr Arg Cys Arg Cys Pro Pro Asp Lys Leu Leu Pro
      65             70             75             80

Phe Asp Pro Met Gly Trp Cys Ser Pro Ser Gly Asp Ala Ser Ile Arg
      85             90             95

Leu Cys Arg Leu Ala Ala Trp Arg Ala Asp Arg Thr Ser Ala Ser Pro
      100            105            110

Ala Ser Gly Arg Leu Tyr Arg Thr Phe Ser Asn Arg Val Ser Ser Asn
      115            120            125

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Arg Asn Thr Ser Trp Glu Thr Arg Ala Asn Trp Ala Arg Arg Gln Ser
 130 135 140
 Ser Leu Met Ser Ala Met Ser Ile Pro Ser Met Gln Met Leu Pro Ala
 145 150 155 160
 Asp Gly Ser Thr Lys Arg Gly Ser Arg Leu Thr Thr Val Asp Leu Pro
 165 170 175
 Leu Pro Glu Arg Pro Thr Arg Ala Thr Arg Ser Pro Cys Leu Met Ser
 180 185 190
 Arg Leu Lys Pro Ser Arg Ala Leu Met Pro Ser Glu Arg Tyr Ser Thr
 195 200 205
 Ser Thr Leu Arg Lys Leu Met Arg Pro Ser Thr Arg Cys Gly Ala Ser
 210 215 220
 Val Pro Leu Ser Cys Ser Gly Gly Val Ser Arg Asn Ala His Thr Pro
 225 230 235 240
 Ser Ala Ala Arg Asn Ile Val Cys Ile Gly Met Leu Met Leu Ala Arg
 245 250 255
 Leu Leu Met Gly Ala Tyr Ile Cys Ser Ile Ala Thr Met Asn Ala Ile
 260 265 270
 Asn Ser Pro Met Val Val
 275

<210> 1133
 <211> 669
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 1133
 atggtacacg tcgccgtagc ttacgggtatt gccgtccggc gtttttgccc aaacgaggtc 60
 atagacgttt tccacgcctt gcaggtagcat cgccaagcgt tcgatgccgt aggtaatttc 120
 gccgagtacg ggcgtgcaat cgataccgcc gacttggttg aaataggtaa actgggttac 180
 ttccatgccg ttgagccaga cttcccagcc caaacccccc gcaccgaggg tgggggtttc 240
 ccagtcgtct tcgacaaagc ggatgtcgtg gactttggga tcgatgccc attcgcgcag 300
 ggagtcgaga tagaggtctt ggatattggc gggggcgggt ttgagggcga cttggaattg 360
 gtaatagtgt tgcaggcggg tgggggttgc gccgtagcgg ccgtctttgg ggcggcggct 420
 gggttggacg taggcggcaa accaaggctc ggggccgagc gcgcgcaggc aggtggcggg 480
 atgggatgtg ccggcaccca cttccatgtc gaagggttg atgacggtgc agcctttgtc 540
 tgcccagaag gtttgcagtt tgaagatgat ttgttggaag gtaagcatgg cttattgttc 600
 gataaaataa aggttttatt ttactgtttc catagccgct tgaatagatt tatctcgaag 660
 acagcctga 669

<210> 1134
 <211> 222
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 1134

Met Val His Val Ala Val Ala Tyr Gly Ile Ala Val Arg Arg Phe Cys
1 5 10 15
Pro Asn Glu Val Ile Asp Val Phe His Ala Leu Gln Val His Arg Gln
20 25 30
Ala Phe Asp Ala Val Gly Asn Phe Ala Glu Tyr Gly Arg Ala Ile Asp
35 40 45
Thr Ala Asp Leu Leu Glu Ile Gly Lys Leu Gly Tyr Phe His Ala Val
50 55 60
Glu Pro Asp Phe Pro Ala Gln Thr Pro Arg Thr Glu Gly Gly Val Phe
65 70 75 80
Pro Val Val Phe Asp Lys Ala Asp Val Val Asp Phe Gly Ile Asp Ala
85 90 95
Gln Phe Ala Gln Gly Val Glu Ile Glu Val Leu Asp Ile Gly Gly Gly
100 105 110
Gly Phe Glu Gly Asp Leu Glu Leu Val Ile Val Leu Gln Ala Val Gly
115 120 125
Val Val Ala Val Ala Ala Val Phe Gly Ala Ala Ala Gly Leu Asp Val
130 135 140
Gly Gly Lys Pro Arg Leu Gly Ala Glu Arg Ala Gln Ala Gly Gly Gly
145 150 155 160
Met Gly Cys Ala Gly Thr Asp Phe His Val Glu Gly Leu Asp Asp Gly
165 170 175
Ala Ala Phe Val Cys Pro Glu Gly Leu Gln Phe Glu Asp Asp Leu Leu
180 185 190
Glu Gly Lys His Gly Leu Leu Phe Asp Lys Ile Lys Val Leu Phe Tyr
195 200 205
Cys Phe His Ser Arg Leu Asn Arg Phe Ile Ser Lys Thr Ala
210 215 220

<210> 1135

<211> 759

<212> DNA

<213> Neisseria meningitidis

<400> 1135

atgccccgct ttgaggacaa gctcgttaggc aggcagggcg agggcggcgt tttcttcggc 60
aagcaggcgt ttggcttgcg cttcgtagtc gttgaactgg cgcagcagcc agtcggcatc 120
gctgtattcg aagttgtagg tggattgctc gacttcgttt tgggtgtaca cgtcgccgta 180
ggtgacgggtg ttgccgtcga gcgttttttgc ccaaacgagg tcgtagacgt tttctacacc 240
ttgcaagtac atcgccaagc gttcgatgcc gtaggtgatt tcgccgagta cgggcgtgca 300
gtcgatgccg ccgacttggt ggaaataggt aaactgggtt acttccatgc cgttgagcca 360

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gacttcccag cccaaacccc acgcgccgag ggtgggggttt tcccagtcgt cttcgacaaa 420
gcggatgtcg tggacttttg gatcgatgcc caattcgcgc agagagtcga gatagaggtc 480
ttggatattg gcgggagcgg gcttgagggc gacttggaat tggtaatagt gttgcaggcg 540
gttgggggttgcgcgtagc ggccgtcttt ggggcggcgg ctgggttgga cgtaggcggc 600
aaaccaaggc tcggggccga gtgcgcgcag gcaggtggcg ggatgggatg tgccggcacc 660
gacttccatg tcgaagggtt ggatgacggt gcagcctttg tctgcccaga atgtttgcag 720
tttgaagatg atttgttgga aggtaagcat ggcttatga 759

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<210> 1136

<211> 252

<212> PRT

<213> Neisseria meningitidis

<400> 1136

```

Met Pro Arg Phe Glu Asp Lys Leu Val Gly Arg Gln Gly Glu Gly Gly
  1             5             10             15

Val Phe Phe Gly Lys Gln Ala Phe Gly Leu Arg Phe Val Val Val Glu
      20             25             30

Leu Ala Gln Gln Pro Val Gly Ile Ala Val Phe Glu Val Val Gly Gly
      35             40             45

Leu Leu Asp Phe Val Leu Val Val His Val Ala Val Gly Asp Gly Val
      50             55             60

Ala Val Glu Arg Phe Cys Pro Asn Glu Val Val Asp Val Phe Tyr Thr
      65             70             75             80

Leu Gln Val His Arg Gln Ala Phe Asp Ala Val Gly Asp Phe Ala Glu
      85             90             95

Tyr Gly Arg Ala Val Asp Ala Ala Asp Leu Leu Glu Ile Gly Lys Leu
      100            105            110

Gly Tyr Phe His Ala Val Glu Pro Asp Phe Pro Ala Gln Thr Pro Arg
      115            120            125

Ala Glu Gly Gly Val Phe Pro Val Val Phe Asp Lys Ala Asp Val Val
      130            135            140

Asp Phe Gly Ile Asp Ala Gln Phe Ala Gln Arg Val Glu Ile Glu Val
      145            150            155            160

Leu Asp Ile Gly Gly Ser Gly Leu Glu Gly Asp Leu Glu Leu Val Ile
      165            170            175

Val Leu Gln Ala Val Gly Val Val Ala Val Ala Ala Val Phe Gly Ala
      180            185            190

Ala Ala Gly Leu Asp Val Gly Gly Lys Pro Arg Leu Gly Ala Glu Cys
      195            200            205

Ala Gln Ala Gly Gly Gly Met Gly Cys Ala Gly Thr Asp Phe His Val
      210            215            220

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Glu Gly Leu Asp Asp Gly Ala Ala Phe Val Cys Pro Glu Cys Leu Gln
 225 230 235 240

Phe Glu Asp Asp Leu Leu Glu Gly Lys His Gly Leu
 245 250

<210> 1137
 <211> 759
 <212> DNA
 <213> Neisseria meningitidis

<400> 1137
 atgccccgct ttgaggacaa gctcgtaggc aggcagggcg agggcgggcgt tttcttcggc 60
 aagcaggcgt ttggcttgcg cttcgtagtc gttgaactgg cgcagcagcc aatcggcatc 120
 gctgtattcg aagttgtagg tggattgttc gacttcgttt tgggtggtaca cgtcgccgta 180
 agttactgta ttaccgtcca gcgtttttgc ccaaacgagg tcatagacgt tttccacgcc 240
 ttgcagggtac atcgccaagc gttcgatgcc gtaggtgatt tcgccgagta cgggggtgca 300
 gtcgatgccg ccgacttggt ggaaatagggt gaactgggtt acttccatac cgttgagcca 360
 gacttcccag cccaaacccc acgcgccgag ggtgggggtt tcccagtcgt cttcgacaaa 420
 gcggatgtcg tgcactttgg ggtcgatgcc caattcgcgc agggagtcga gatagaggtc 480
 ttggatattg gcgggagcgg gcttgagggc gacttggaat tggtaatagt gttgcaggcg 540
 gttgggggtt tcgccgtagc gaccgtcttt ggggcggcgg ctgggttgga cgtaggcggc 600
 aaaccaaggc tcggggccga gtgcgcgcag acaggtggcg ggatgggatg tgccggcacc 660
 gacttccatg tcgaagggtt ggatgacggt gcagcctttg tctgccccaga atgtttgcag 720
 tttgaagatg atttggttga aggttaagcat ggcttatga 759

<210> 1138
 <211> 252
 <212> PRT
 <213> Neisseria meningitidis

<400> 1138
 Met Pro Arg Phe Glu Asp Lys Leu Val Gly Arg Gln Gly Glu Gly Gly
 1 5 10 15
 Val Phe Phe Gly Lys Gln Ala Phe Gly Leu Arg Phe Val Val Val Glu
 20 25 30
 Leu Ala Gln Gln Pro Ile Gly Ile Ala Val Phe Glu Val Val Gly Gly
 35 40 45
 Leu Phe Asp Phe Val Leu Val Val His Val Ala Val Ser Tyr Cys Ile
 50 55 60
 Thr Val Gln Arg Phe Cys Pro Asn Glu Val Ile Asp Val Phe His Ala
 65 70 75 80
 Leu Gln Val His Arg Gln Ala Phe Asp Ala Val Gly Asp Phe Ala Glu
 85 90 95
 Tyr Gly Gly Ala Val Asp Ala Ala Asp Leu Leu Glu Ile Gly Glu Leu
 100 105 110

Gly Tyr Phe His Thr Val Glu Pro Asp Phe Pro Ala Gln Thr Pro Arg

115	120	125
Ala Glu Gly Gly Val Phe Pro Val Val Phe Asp Lys Ala Asp Val Val		
130	135	140
His Phe Gly Val Asp Ala Gln Phe Ala Gln Gly Val Glu Ile Glu Val		
145	150	155
Leu Asp Ile Gly Gly Ser Gly Leu Glu Gly Asp Leu Glu Leu Val Ile		
	165	170
Val Leu Gln Ala Val Gly Val Val Ala Val Ala Thr Val Phe Gly Ala		
	180	185
Ala Ala Gly Leu Asp Val Gly Gly Lys Pro Arg Leu Gly Ala Glu Cys		
	195	200
Ala Gln Thr Gly Gly Gly Met Gly Cys Ala Gly Thr Asp Phe His Val		
	210	215
Glu Gly Leu Asp Asp Gly Ala Ala Phe Val Cys Pro Glu Cys Leu Gln		
225	230	235
Phe Glu Asp Asp Leu Leu Glu Gly Lys His Gly Leu		
	245	250

<210> 1139
 <211> 512
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1139
 ttgcgtgcaa tcacgcccgg tgcgattttt tcgacagggg cgggtcaaagt tgtattaatc 60
 ggacctttgc cgtcgatagg ccgacccaat gcatcgacga cgcgtccgac caattcgcgt 120
 ccgaccggca cttctaaaat acggccggta caggtaaccg tgcgccttc tttaatatgt 180
 tcgtactcgc ccaacactac ggcaccgacg gagtcgcgct ccaggttcat cgccaagcct 240
 aaagtgttac ccggaattc gagcatctca ccttgcattg catctgacaa accatggatg 300
 cgaacgatac cgtcagttac cgaaatcacc gtaccacggg tactcacttc ggcatattaca 360
 gacagatttt cgtcttggc tttaatcaga tcgctaattt cagcaggatt aagctgcatg 420
 aaaactctcc taattcgta tagtcgtgta caaagcactc agtttgcctt gtacagacaa 480
 atccaaaacc tgatcaccca cttcaacttt ta 512

<210> 1140
 <211> 170
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 1140
 Leu Arg Ala Ile Thr Pro Gly Ala Ile Phe Ser Thr Gly Ala Val Lys
 1 5 10 15
 Val Val Leu Ile Gly Pro Leu Pro Ser Ile Gly Arg Pro Asn Ala Ser
 20 25 30
 Thr Thr Arg Pro Thr Asn Ser Arg Pro Thr Gly Thr Ser Lys Ile Arg

35	40	45
Pro Val Gln Val Thr Val Ser Pro Ser Leu Ile Cys Ser Tyr Ser Pro		
50	55	60
Asn Thr Thr Ala Pro Thr Glu Ser Arg Ser Arg Phe Ile Ala Lys Pro		
65	70	75
Lys Val Leu Pro Gly Asn Ser Ser Ile Ser Pro Cys Ile Ala Ser Asp		
	85	90
Lys Pro Trp Met Arg Thr Ile Pro Ser Val Thr Glu Ile Thr Val Pro		
	100	110
Arg Val Leu Thr Ser Ala Phe Thr Asp Arg Phe Ser Ile Leu Ala Leu		
	115	120
Ile Arg Ser Leu Ile Ser Ala Gly Leu Ser Cys Met Lys Thr Leu Leu		
	130	140
Ile Arg His Ser Arg Val Gln Ser Thr Gln Phe Ala Leu Tyr Arg Gln		
145	150	155
Ile Gln Asn Leu Ile Thr His Phe Asn Phe		
	165	170

<210> 1141
 <211> 660
 <212> DNA
 <213> Neisseria meningitidis

<400> 1141
 ttgcgcgcaa tcacgcccgg tgcgattttt tcgatagggg cgggtcaaagt tgtattaatc 60
 gggccttttg cgtcgatagg ccgacccaat gcatcaacga cgcgtccgac cagttcgcgt 120
 ccgaccggca cttccaagat acgaccggta caggtaaccg tgcgccttc tttaatgtgt 180
 tcgtactcgc ccaacactac ggcgccgacg gagtcgcgct ccaggttcat cgccaagccg 240
 aaagtgttac ccgggaattc gagcatctca ccttgcattg catctgacaa accatggatg 300
 cgaacgatac cgtcagttac cgaaattacc gtaccacagg tacgcacttc ggcatattaca 360
 gacagatttt cgatcttggc tttaatcaaa tcgctaattt cagcaggatt aagctgcatg 420
 aaaactctcc taattcgtca tagtcgtgta caaggcactc aatttgcctt gtacagacaa 480
 atccàaaacc tgatcaccca cttcaacttt tatgccgcca atcagctccg gttcgatttc 540
 gacagagatt ttcagctcgc tgcgaaacg cttattcagc atttgacca actcgccgac 600
 ctgtttgtcg gtcaacggat aggcactgta aatgacggca gatttgatat gggtgaatga 660

<210> 1142
 <211> 219
 <212> PRT
 <213> Neisseria meningitidis

<400> 1142
 Leu Arg Ala Ile Thr Pro Gly Ala Ile Phe Ser Ile Gly Ala Val Lys
 1 5 10 15
 Val Val Leu Ile Gly Pro Leu Pro Ser Ile Gly Arg Pro Asn Ala Ser
 20 25 30

Thr Thr Arg Pro Thr Ser Ser Arg Pro Thr Gly Thr Ser Lys Ile Arg
 35 40 45
 Pro Val Gln Val Thr Val Ser Pro Ser Leu Met Cys Ser Tyr Ser Pro
 50 55 60
 Asn Thr Thr Ala Pro Thr Glu Ser Arg Ser Arg Phe Ile Ala Lys Pro
 65 70 75 80
 Lys Val Leu Pro Gly Asn Ser Ser Ile Ser Pro Cys Ile Ala Ser Asp
 85 90 95
 Lys Pro Trp Met Arg Thr Ile Pro Ser Val Thr Glu Ile Thr Val Pro
 100 105 110
 Gln Val Arg Thr Ser Ala Phe Thr Asp Arg Phe Ser Ile Leu Ala Leu
 115 120 125
 Ile Lys Ser Leu Ile Ser Ala Gly Leu Ser Cys Met Lys Thr Leu Leu
 130 135 140
 Ile Arg His Ser Arg Val Gln Gly Thr Gln Phe Ala Leu Tyr Arg Gln
 145 150 155 160
 Ile Gln Asn Leu Ile Thr His Phe Asn Phe Tyr Ala Ala Asn Gln Leu
 165 170 175
 Arg Phe Asp Phe Asp Arg Asp Phe Gln Leu Ala Val Glu Thr Leu Ile
 180 185 190
 Gln His Leu His Gln Leu Ala Asp Leu Phe Val Gly Gln Arg Ile Gly
 195 200 205
 Thr Val Asn Asp Gly Arg Phe Asp Met Val Glu
 210 215

<210> 1143

<211> 660

<212> DNA

<213> Neisseria meningitidis

<400> 1143

ttgcgcgcaa tcacgcccg tgcgattttt tcgatagggg cgggtcaaagt tgtattaatc 60
 gggcctttgc cgtcgatagg ccgacccaat gcatcaacga cgcgtccgac cagttcgcgt 120
 ccgaccggca cttccaagat acgaccggta caggtaaccg tgtcgccttc tttaatatgt 180
 tcgtgctcgc ccaacactac ggcgccgacg gagtcgcgct ccaggttcat cgccaagccg 240
 aaagtgttac ccgggaattc gagcatctca ccttgcatg catctgacaa accatggatg 300
 cgaacgatac cgtcagttac cgaaatcacc gtaccacggg tacgcacttc ggcatttaca 360
 gacagatttt cgatcttggc tttaatcaaa tcgctaattt cagcaggatt aagctgcatg 420
 aaaactctcc taattcgtca tagtcgtgta caaggcactc aatttgcctt gtacagacaa 480
 atccaaaacc tgatcaccca cttcaacttt tatgccgcca atcagctccg gttcgatttc 540
 gacagagatt ttcagctcgc tgtcgaaacg cttattcagc atttgcgcca actcgccgac 600
 ctgtttgtcg gtcaacggat aggcaactgta aatgacggca gatttgatat ggttgaatga 660

<210> 1144
<211> 219
<212> PRT
<213> *Neisseria meningitidis*

<400> 1144
Leu Arg Ala Ile Thr Pro Gly Ala Ile Phe Ser Ile Gly Ala Val Lys
1 5 10 15
Val Val Leu Ile Gly Pro Leu Pro Ser Ile Gly Arg Pro Asn Ala Ser
20 25 30
Thr Thr Arg Pro Thr Ser Ser Arg Pro Thr Gly Thr Ser Lys Ile Arg
35 40 45
Pro Val Gln Val Thr Val Ser Pro Ser Leu Ile Cys Ser Cys Ser Pro
50 55 60
Asn Thr Thr Ala Pro Thr Glu Ser Arg Ser Arg Phe Ile Ala Lys Pro
65 70 75 80
Lys Val Leu Pro Gly Asn Ser Ser Ile Ser Pro Cys Ile Ala Ser Asp
85 90 95
Lys Pro Trp Met Arg Thr Ile Pro Ser Val Thr Glu Ile Thr Val Pro
100 105 110
Arg Val Arg Thr Ser Ala Phe Thr Asp Arg Phe Ser Ile Leu Ala Leu
115 120 125
Ile Lys Ser Leu Ile Ser Ala Gly Leu Ser Cys Met Lys Thr Leu Leu
130 135 140
Ile Arg His Ser Arg Val Gln Gly Thr Gln Phe Ala Leu Tyr Arg Gln
145 150 155 160
Ile Gln Asn Leu Ile Thr His Phe Asn Phe Tyr Ala Ala Asn Gln Leu
165 170 175
Arg Phe Asp Phe Asp Arg Asp Phe Gln Leu Ala Val Glu Thr Leu Ile
180 185 190
Gln His Leu Arg Gln Leu Ala Asp Leu Phe Val Gly Gln Arg Ile Gly
195 200 205
Thr Val Asn Asp Gly Arg Phe Asp Met Val Glu
210 215

<210> 1145
<211> 459
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 1145
atgacgcgga tttgcggctg cttgatttca acggttttga gtgttttcggc aagtttgtcg 60
gcggcgggtt tcatcaggct gcaatgggaa ggaacggata ccggcagcgg cagggcgcgt 120

```

ttggctccgg cttcttttggc ggcagccatg gtgcgtccga cggcggcggc gttgcctgca 180
atcacgactt gtccgggcca gttgaagttg acggcttcga ccacttcgcc ctgtgcggat 240
tcggcacaaa tctgcctgac ctgttcattc tccaaaccca aaatggccgc cattgcgcct 300
acgccttgcg gtacggcgga ctgcatcagt tcggcgcgca ggcggacgag tttgacggca 360
tcggcaaaat ccaatgcttc ggcggcgaca agcgcggtgt attcgccgag gctgtgtccg 420
gcaacggcgg caggcgtttt gccgcccact tccaaatag 459

```

<210> 1146

<211> 152

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1146

```

Met Thr Arg Ile Cys Gly Cys Leu Ile Ser Thr Val Leu Ser Val Ser
  1           5           10           15

```

```

Ala Ser Leu Ser Ala Ala Gly Phe Ile Arg Leu Gln Trp Glu Gly Thr
      20           25           30

```

```

Asp Thr Gly Ser Gly Arg Ala Arg Leu Ala Pro Ala Ser Leu Ala Ala
      35           40           45

```

```

Ala Met Val Arg Pro Thr Ala Ala Ala Leu Pro Ala Ile Thr Thr Cys
      50           55           60

```

```

Pro Gly Glu Leu Lys Leu Thr Ala Ser Thr Thr Ser Pro Cys Ala Asp
      65           70           75           80

```

```

Ser Ala Gln Ile Cys Leu Thr Cys Ser Ser Ser Lys Pro Lys Met Ala
      85           90           95

```

```

Ala Ile Ala Pro Thr Pro Cys Gly Thr Ala Asp Cys Ile Ser Ser Ala
      100          105          110

```

```

Arg Arg Arg Thr Ser Leu Thr Ala Ser Ala Lys Ser Asn Ala Ser Ala
      115          120          125

```

```

Ala Thr Ser Ala Val Tyr Ser Pro Arg Leu Cys Pro Ala Thr Ala Ala
      130          135          140

```

```

Gly Val Leu Pro Pro Thr Ser Lys
      145          150

```

<210> 1147

<211> 459

<212> DNA

<213> *Neisseria meningitidis*

<400> 1147

```

ataacgcgga tttgcggctg cttgatttca acggttttca gggcttcggc aagtttgtcg 60
gcggcgggtt tcatcaggct gcaatgggaa ggtacggaca cgggcagcgg cagggcgcggt 120
ttggcaccgg cttcttttggc ggcagccatg ggcggtccga cggcggcggc gttgcctgca 180
atcacgattt gtccgggtga gttgaagttg acggcttcga ccacttcgct ttgggcgggt 240
tcggcacaaa tggctttaac ctgctcatct tccaagccga gaatcgccgc cattgcgccc 300

```

acgccttgcg gtacggcgga ctgcatcagt tcggcgcgca ggcgcacgag tttgaccgcg 360
 tcggcaaaat tcaatgcgcc ggcggaacg agtgcggtgt attcgccgag gctgtgtccg 420
 gcaacggcgg caggcgtttt gccgccgct tctaaatag 459

<210> 1148

<211> 152

<212> PRT

<213> Neisseria meningitidis

<400> 1148

Ile Thr Arg Ile Cys Gly Cys Leu Ile Ser Thr Val Phe Arg Ala Ser
 1 5 10 15

Ala Ser Leu Ser Ala Ala Gly Phe Ile Arg Leu Gln Trp Glu Gly Thr
 20 25 30

Asp Thr Gly Ser Gly Arg Ala Arg Leu Ala Pro Ala Ser Leu Ala Ala
 35 40 45

Ala Met Ala Arg Pro Thr Ala Ala Ala Leu Pro Ala Ile Thr Ile Cys
 50 55 60

Pro Gly Glu Leu Lys Leu Thr Ala Ser Thr Thr Ser Leu Trp Ala Ala
 65 70 75 80

Ser Ala Gln Met Ala Leu Thr Cys Ser Ser Ser Lys Pro Arg Ile Ala
 85 90 95

Ala Ile Ala Pro Thr Pro Cys Gly Thr Ala Asp Cys Ile Ser Ser Ala
 100 105 110

Arg Arg Arg Thr Ser Leu Thr Ala Ser Ala Lys Phe Asn Ala Pro Ala
 115 120 125

Ala Thr Ser Ala Val Tyr Ser Pro Arg Leu Cys Pro Ala Thr Ala Ala
 130 135 140

Gly Val Leu Pro Pro Ala Ser Lys
 145 150

<210> 1149

<211> 459

<212> DNA

<213> Neisseria meningitidis

<400> 1149

atgacncnga tttgcggctg cttgatttca acggttttna gggcttcggc gagtttgtcg 60
 gcggcggtt tcatgaggct gcaatgggaa ggtacngaca cnggcagcgg cagggcgcgt 120
 ttggcgccgg cttctttggc ggcaagcata gcgcgctcga cggcgggcggc attgcctgca 180
 atcacgactt gtccggggcga gttgaagttg acggcttcaa ccacttcatc ctgtgcggat 240
 tcggcgcaaa tttgttttac ctgttcatct tccaagccga gaatcgccgc cattgcgccc 300
 acgccttgcg gtacggcgga ctgcatcagt tcggcgcgca ngcgcacgag tttgaccgcg 360
 tcggcaaaat ccaatgcgcc ggcggaacn agtgcggtgt attcgccgan gctgtgtccg 420
 gcaacggcgg caggcgtttt gccgccgct tccgaatag 459

<210> 1150
<211> 152
<212> PRT
<213> *Neisseria meningitidis*

<400> 1150
Met Thr Xaa Ile Cys Gly Cys Leu Ile Ser Thr Val Xaa Arg Ala Ser
1 5 10 15
Ala Ser Leu Ser Ala Ala Gly Phe Met Arg Leu Gln Trp Glu Gly Thr
20 25 30
Asp Thr Gly Ser Gly Arg Ala Arg Leu Ala Pro Ala Ser Leu Ala Ala
35 40 45
Ser Ile Ala Arg Ser Thr Ala Ala Ala Leu Pro Ala Ile Thr Thr Cys
50 55 60
Pro Gly Glu Leu Lys Leu Thr Ala Ser Thr Thr Ser Ser Cys Ala Asp
65 70 75 80
Ser Ala Gln Ile Cys Phe Thr Cys Ser Ser Ser Lys Pro Arg Ile Ala
85 90 95
Ala Ile Ala Pro Thr Pro Cys Gly Thr Ala Asp Cys Ile Ser Ser Ala
100 105 110
Arg Xaa Arg Thr Ser Leu Thr Ala Ser Ala Lys Ser Asn Ala Pro Ala
115 120 125
Ala Thr Ser Ala Val Tyr Ser Pro Xaa Leu Cys Pro Ala Thr Ala Ala
130 135 140
Gly Val Leu Pro Pro Ala Ser Glu
145 150

<210> 1151
<211> 927
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 1151
atgaaacacc tcaaacttac ctttattgcc gcattgctgg ccaccgccgc aactgccgca 60
ccccttcggy ttgtaaccag tticagcatt ttaggcgacg tagccaaaca aatcggcggt 120
gagcgcgtag ccgtacaaag cctcgtcgga gccaaccaag atactcatgc ctatcacatg 180
accagtggcg acattaaaaa aatccgcagt gcaaaactcg tctgtctcaa cggtttggga 240
cttgaagccg ccgacatcca acgcgccgtc aaacagagca aagtatccta tgccgaagcg 300
accaaaggca tccaaccctt caaagccgaa gaagaaggcg gacaccatca cgaccaccat 360
cacgaccacg atcatgacca cgaaggacac caccacgacc acggcgaata tgacccccac 420
gtctggaacg accctgttct tatgtccgac tatgcccata acgtcgctga aacctgata 480
aaggccgatc ccgaaggcaa agttttattat caacaacgct tgggcaacta ccaaattgcag 540
cttaaaaaac tgcacagcga cgcacaagcc gcattttaatg ccgtccctgc cgccaaacgc 600
aaagtccctga ccgggcacga cgcattttcc tacatgggca accgctacaa catcagcttc 660
atcgccccgc aaggcgtgag cagcgaagcc gagccgtccg ccaaacaagt cgccgccatc 720

atccggcaaa tcaaacgcga aggcataaaa gccgtattta ccgaaaatat caaagacacc 780
 cgcatgggttg accgcatcgc caaagaaaacc ggcgtcaacg tcagcggcaa actgtattcc 840
 gacgcactcg gcaacgcgcc cgcagacacc tacatcggca tgtaccgcca caacgtcgaa 900
 gccttgacca acgcgatgaa gcaataa 927

<210> 1152
 <211> 308
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 1152
 Met Lys His Leu Lys Leu Thr Leu Ile Ala Ala Leu Leu Ala Thr Ala
 1 5 10 15
 Ala Thr Ala Ala Pro Leu Pro Val Val Thr Ser Phe Ser Ile Leu Gly
 20 25 30
 Asp Val Ala Lys Gln Ile Gly Gly Glu Arg Val Ala Val Gln Ser Leu
 35 40 45
 Val Gly Ala Asn Gln Asp Thr His Ala Tyr His Met Thr Ser Gly Asp
 50 55 60
 Ile Lys Lys Ile Arg Ser Ala Lys Leu Val Leu Leu Asn Gly Leu Gly
 65 70 75 80
 Leu Glu Ala Ala Asp Ile Gln Arg Ala Val Lys Gln Ser Lys Val Ser
 85 90 95
 Tyr Ala Glu Ala Thr Lys Gly Ile Gln Pro Leu Lys Ala Glu Glu Glu
 100 105 110
 Gly Gly His His His Asp His His His Asp His Asp His Asp His Glu
 115 120 125
 Gly His His His Asp His Gly Glu Tyr Asp Pro His Val Trp Asn Asp
 130 135 140
 Pro Val Leu Met Ser Asp Tyr Ala Gln Asn Val Ala Glu Thr Leu Ile
 145 150 155 160
 Lys Ala Asp Pro Glu Gly Lys Val Tyr Tyr Gln Gln Arg Leu Gly Asn
 165 170 175
 Tyr Gln Met Gln Leu Lys Lys Leu His Ser Asp Ala Gln Ala Ala Phe
 180 185 190
 Asn Ala Val Pro Ala Ala Lys Arg Lys Val Leu Thr Gly His Asp Ala
 195 200 205
 Phe Ser Tyr Met Gly Asn Arg Tyr Asn Ile Ser Phe Ile Ala Pro Gln
 210 215 220
 Gly Val Ser Ser Glu Ala Glu Pro Ser Ala Lys Gln Val Ala Ala Ile
 225 230 235 240

Ile Arg Gln Ile Lys Arg Glu Gly Ile Lys Ala Val Phe Thr Glu Asn
245 250 255

Ile Lys Asp Thr Arg Met Val Asp Arg Ile Ala Lys Glu Thr Gly Val
260 265 270

Asn Val Ser Gly Lys Leu Tyr Ser Asp Ala Leu Gly Asn Ala Pro Ala
275 280 285

Asp Thr Tyr Ile Gly Met Tyr Arg His Asn Val Glu Ala Leu Thr Asn
290 295 300

Ala Met Lys Gln
305

<210> 1153
<211> 915
<212> DNA
<213> Neisseria meningitidis

<400> 1153
atgaaacacc tcaaactcac ccttattgcc gcattgctga ccgcctccgc aactgccgcc 60
cccctgccgg ttgtaaccag cttcagcatt ttaggcgacg tagccaaaca aatcggcgga 120
gagcgcgtat ccatacaaag tttggtcgga gccaaccaag atacgcacgc ctatcatatg 180
accagtggcg acattaaaaa aatccgcagt gcaaaaactcg tcctgctcaa cggcttagga 240
cttgaagctg ccgatgtgca acgcgccgctc aaacaaagca aagtatccta taccgaagcg 300
accaaaggca tccaaccctt caaagccgaa gaagaaggcg gacaccatca cgaccacgat 360
catgaccacg aaggacacca ccattgaccac ggcgaatatg acccgcacgt ctggaacgac 420
cccgtcctta tgtccgccta tgcccaaaac gttgccaaag ccttgataaa ggccgatccc 480
gaaggcaaag tttattatca acaacgcttg ggcaactacc aaatgcagct caaaaaactg 540
cacagcgacg cacaagccgc atttaatgcc gtccctgctg ccaaacgcaa agtcctgacc 600
gggcacgatg ccttttccta tatgggcaaa cgttaccata tcgaattcat cgcccgcgaa 660
ggcgtgagca gcgaagccga gccttcggcc aaacaagtcg ccgccatcat ccgacaaatc 720
aaacgcgaag gcatcaaagc cgtctttacc gaaaacatca aggacaccgg tatggttgac 780
cgtatcgcca aagaaaccgg tgtcaacgctc agcggcaaac tgtattccga cgcactcggc 840
aacgcgcccg cagacaccta catcggaatg taccgccaca acatcaaagc cttgaccaac 900
gcgatgaagc aataa 915

<210> 1154
<211> 304
<212> PRT
<213> Neisseria meningitidis

<400> 1154
Met Lys His Leu Lys Leu Thr Leu Ile Ala Ala Leu Leu Thr Ala Ser
1 5 10 15

Ala Thr Ala Ala Pro Leu Pro Val Val Thr Ser Phe Ser Ile Leu Gly
20 25 30

Asp Val Ala Lys Gln Ile Gly Gly Glu Arg Val Ser Ile Gln Ser Leu
35 40 45

Val Gly Ala Asn Gln Asp Thr His Ala Tyr His Met Thr Ser Gly Asp

50					55					60					
Ile	Lys	Lys	Ile	Arg	Ser	Ala	Lys	Leu	Val	Leu	Leu	Asn	Gly	Leu	Gly
65					70					75					80
Leu	Glu	Ala	Ala	Asp	Val	Gln	Arg	Ala	Val	Lys	Gln	Ser	Lys	Val	Ser
				85					90					95	
Tyr	Thr	Glu	Ala	Thr	Lys	Gly	Ile	Gln	Pro	Leu	Lys	Ala	Glu	Glu	Glu
			100					105					110		
Gly	Gly	His	His	His	Asp	His	Asp	His	Asp	His	Glu	Gly	His	His	His
		115					120					125			
Asp	His	Gly	Glu	Tyr	Asp	Pro	His	Val	Trp	Asn	Asp	Pro	Val	Leu	Met
		130				135					140				
Ser	Ala	Tyr	Ala	Gln	Asn	Val	Ala	Lys	Ala	Leu	Ile	Lys	Ala	Asp	Pro
145					150					155					160
Glu	Gly	Lys	Val	Tyr	Tyr	Gln	Gln	Arg	Leu	Gly	Asn	Tyr	Gln	Met	Gln
			165						170					175	
Leu	Lys	Lys	Leu	His	Ser	Asp	Ala	Gln	Ala	Ala	Phe	Asn	Ala	Val	Pro
			180					185					190		
Ala	Ala	Lys	Arg	Lys	Val	Leu	Thr	Gly	His	Asp	Ala	Phe	Ser	Tyr	Met
		195					200					205			
Gly	Lys	Arg	Tyr	His	Ile	Glu	Phe	Ile	Ala	Pro	Gln	Gly	Val	Ser	Ser
	210					215					220				
Glu	Ala	Glu	Pro	Ser	Ala	Lys	Gln	Val	Ala	Ala	Ile	Ile	Arg	Gln	Ile
225					230					235					240
Lys	Arg	Glu	Gly	Ile	Lys	Ala	Val	Phe	Thr	Glu	Asn	Ile	Lys	Asp	Thr
			245						250					255	
Arg	Met	Val	Asp	Arg	Ile	Ala	Lys	Glu	Thr	Gly	Val	Asn	Val	Ser	Gly
			260					265					270		
Lys	Leu	Tyr	Ser	Asp	Ala	Leu	Gly	Asn	Ala	Pro	Ala	Asp	Thr	Tyr	Ile
		275					280					285			
Gly	Met	Tyr	Arg	His	Asn	Ile	Lys	Ala	Leu	Thr	Asn	Ala	Met	Lys	Gln
	290					295					300				

<210> 1155

<211> 927

<212> DNA

<213> Neisseria meningitidis

<400> 1155

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atgaaacacc ccaaactcac ctttatcgcc gcattgctga ccactgccgc aactgccgcc 60
cccctgccgg ttgtaaccag cttcagcatt ttaggcgacg tagccaaaca aatcggcgga 120
gagcgcgtat ccatacaaaag tttggtcgga gccaaaccaag atacgcacgc ctatcatatg 180
accagcggcg acattaaaaa aatccgcagt gcaaaactcg tcctgattaa cggcttagga 240
cttgaagctg ccgacatcca acgtgccgtc aaacagagca aagtatccta tgccgaagcg 300
accaaaggca tccaaccctt caaagccgaa gaagaaggcg gacaccatca cgaccacgat 360
catgaccacg accatgacca cgaaggacac caccacgacc acggcgaata tgacccccac 420
gtctggaacg accccgtcct tatgtccgcc tatgcccaaa acgtcgccga agccctgata 480
aaggccgacc ccgaaggcaa agtttattat caacaacgct tgggcaacta ccaaatgcag 540
ctcaaaaaac tgcacagtga cgcacaagcc gcatttaatg ccgtccctgc cgccaaacgc 600
aaagtcttga ccgggcacga tgccttttcc tatatgggca aacgttacca tatcgaattc 660
atcgcccccac aaggtgtgag cagcgaagcc gagccttcag ccaaacaagt cgccgccatc 720
atccgacaaa tcaaacgcga aggcatacaa gccgtattta ccgaaaatat caaagacacc 780
cgcatgggtg accgcatcgc caaagaaacc ggtgtcaacg tcagcggcaa actgtattcc 840
gacgcactcg gcaacgcacc cgcagacacc tacatcggca tgtaccgcca caacatcaaa 900
gccttaacca acgcgatgaa gcaataa 927

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<210> 1156

<211> 308

<212> PRT

<213> *Neisseria meningitidis*

<400> 1156

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Met Lys His Pro Lys Leu Thr Leu Ile Ala Ala Leu Leu Thr Thr Ala
  1             5             10             15

Ala Thr Ala Ala Pro Leu Pro Val Val Thr Ser Phe Ser Ile Leu Gly
          20             25             30

Asp Val Ala Lys Gln Ile Gly Gly Glu Arg Val Ser Ile Gln Ser Leu
  35             40             45

Val Gly Ala Asn Gln Asp Thr His Ala Tyr His Met Thr Ser Gly Asp
  50             55             60

Ile Lys Lys Ile Arg Ser Ala Lys Leu Val Leu Ile Asn Gly Leu Gly
  65             70             75             80

Leu Glu Ala Ala Asp Ile Gln Arg Ala Val Lys Gln Ser Lys Val Ser
          85             90             95

Tyr Ala Glu Ala Thr Lys Gly Ile Gln Pro Leu Lys Ala Glu Glu Glu
 100             105             110

Gly Gly His His His Asp His Asp His Asp His Asp His Asp His Glu
 115             120             125

Gly His His His Asp His Gly Glu Tyr Asp Pro His Val Trp Asn Asp
 130             135             140

Pro Val Leu Met Ser Ala Tyr Ala Gln Asn Val Ala Glu Ala Leu Ile
 145             150             155             160

Lys Ala Asp Pro Glu Gly Lys Val Tyr Tyr Gln Gln Arg Leu Gly Asn
          165             170             175

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Tyr Gln Met Gln Leu Lys Lys Leu His Ser Asp Ala Gln Ala Ala Phe
 180 185 190
 Asn Ala Val Pro Ala Ala Lys Arg Lys Val Leu Thr Gly His Asp Ala
 195 200 205
 Phe Ser Tyr Met Gly Lys Arg Tyr His Ile Glu Phe Ile Ala Pro Gln
 210 215 220
 Gly Val Ser Ser Glu Ala Glu Pro Ser Ala Lys Gln Val Ala Ala Ile
 225 230 235 240
 Ile Arg Gln Ile Lys Arg Glu Gly Ile Lys Ala Val Phe Thr Glu Asn
 245 250 255
 Ile Lys Asp Thr Arg Met Val Asp Arg Ile Ala Lys Glu Thr Gly Val
 260 265 270
 Asn Val Ser Gly Lys Leu Tyr Ser Asp Ala Leu Gly Asn Ala Pro Ala
 275 280 285
 Asp Thr Tyr Ile Gly Met Tyr Arg His Asn Ile Lys Ala Leu Thr Asn
 290 295 300
 Ala Met Lys Gln
 305

<210> 1157
 <211> 828
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 1157
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 ttccctcgta tgcgcggtat gagcctgata ggcgacgcat tgagccacgc cgtcctgccc 120
 ggtgccgccc tgggctacat gtttgccggc ttgagcctgc ccgctatggg tgtgggcccgg 180
 tttgccgccc gtatgctgat ggcgctgctt gccggactcg tcagccgctt taccaccctg 240
 aaagaagatg ccaactttgc cgccttttac ctgagcagcc tcgccatcgg cgtaatcctc 300
 atcagcaaaa acggcagcag cgtcgattta ctccacctcc ttttcggatc tgtgcttgcc 360
 gtcgatattc ccgcactgca actcatcgcc gccgtctccg gcctcacgct cattaccctt 420
 gccgtcatct accgccccct ggtgctagaa agcatagacc cccttttctt caagtccgtc 480
 aacggcaaaag gcgggctttg gcacgtcatt ttccctcatc tcgtcggtat gaacctcgta 540
 tccggcttcc aagctctcgg catcctgatg tcgggtcggaa ttatgatgct gcccgccatt 600
 accgcccgtt tatgggcaag aaatatgggg acgctcattc tgttgtccgt cctcatcgcc 660
 cttttttgcg gtttgatcgg gctgctcatt tcctaccaca tcgaaatccc ttccggcccc 720
 gccatcatcc tctgttgag cgtcctttat cttttttccg tcatactcgg caaagaaggc 780
 ggcaccttgc ccaaattggt caaaaaccac cgccaccaca ccacctga 828

<210> 1158
 <211> 275
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 1158
 Met His Tyr Ala Leu Ala Ser Val Phe Cys Leu Ser Leu Ser Ala Ala

1	5	10	15
Pro Val Gly Val Phe Leu Val Met Arg Arg Met Ser Leu Ile Gly Asp	20	25	30
Ala Leu Ser His Ala Val Leu Pro Gly Ala Ala Val Gly Tyr Met Phe	35	40	45
Ala Gly Leu Ser Leu Pro Ala Met Gly Val Gly Gly Phe Ala Ala Gly	50	55	60
Met Leu Met Ala Leu Leu Ala Gly Leu Val Ser Arg Phe Thr Thr Leu	65	70	75
Lys Glu Asp Ala Asn Phe Ala Ala Phe Tyr Leu Ser Ser Leu Ala Ile	85	90	95
Gly Val Ile Leu Ile Ser Lys Asn Gly Ser Ser Val Asp Leu Leu His	100	105	110
Leu Leu Phe Gly Ser Val Leu Ala Val Asp Ile Pro Ala Leu Gln Leu	115	120	125
Ile Ala Ala Val Ser Gly Leu Thr Leu Ile Thr Leu Ala Val Ile Tyr	130	135	140
Arg Pro Leu Val Leu Glu Ser Ile Asp Pro Leu Phe Leu Lys Ser Val	145	150	155
Asn Gly Lys Gly Gly Leu Trp His Val Ile Phe Leu Ile Leu Val Val	165	170	175
Met Asn Leu Val Ser Gly Phe Gln Ala Leu Gly Ile Leu Met Ser Val	180	185	190
Gly Ile Met Met Leu Pro Ala Ile Thr Ala Arg Leu Trp Ala Arg Asn	195	200	205
Met Gly Thr Leu Ile Leu Leu Ser Val Leu Ile Ala Leu Phe Cys Gly	210	215	220
Leu Ile Gly Leu Leu Ile Ser Tyr His Ile Glu Ile Pro Ser Gly Pro	225	230	235
Ala Ile Ile Leu Cys Cys Ser Val Leu Tyr Leu Phe Ser Val Ile Leu	245	250	255
Gly Lys Glu Gly Gly Ile Leu Pro Lys Trp Phe Lys Asn His Arg His	260	265	270
His Thr Thr	275		

<210> 1159

<211> 792

<212> DNA

<213> *Neisseria meningitidis*

<400> 1159

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atgcgctacg ccctcgcacg cgtcttctgc ctgtccctca gtgccgcacc cgtcggcgta 60
ttcctcgtca tgcgccgtat gagcctgata ggcgacgcat tgagccacgc cgtcctgccc 120
gggtgccgccc tgcgctacat gtttgccggc ttgagcctgc ccgccatggg tttgggcggc 180
gtagccgcag gcatgctgat ggcaactgctt gccggactcg tcagccgctt caccaccctg 240
aaagaagatg ccaactttgc cgccttttat ctcagcagcc tcgccatcgg cgtagtccctc 300
gtcagcaaaa acgggagcag cgtcgatttg ctccacctcc ttttcggctc tgtacttgcc 360
gtcgatatcc ctgccctgca gctcatcgcc gccgtctcca gcctcacgct cattaccctt 420
gccgtcatct accgcccgct cgtactcgaa agcatcgacc cctgttttct caaatccgtc 480
ggcggcaaaag gcgggctttg gcacgtcctc tttctcgtcc tggtcgtcat gaacctcgta 540
tccggctttc aagccctcgg cacactcatg tccgtcggac tcatgatgct gccagccatt 600
accgcccgcc tgtgggcgaa gcatatgggc gcactcatcc tcctatccgt tctgacagcc 660
ctgctgtgcg gcttgagcgg actgctcatt tcctaccaca tcgaaattcc ttccggtccc 720
gccatcatcc tctgttcgag cgtcctttat ctcttttccg tcatactcgg caaagaaggc 780
ggcattctga cc                                     792
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<210> 1160

<211> 264

<212> PRT

<213> *Neisseria meningitidis*

<400> 1160

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Met Arg Tyr Ala Leu Ala Ser Val Phe Cys Leu Ser Leu Ser Ala Ala
 1             5             10             15

Pro Val Gly Val Phe Leu Val Met Arg Arg Met Ser Leu Ile Gly Asp
      20             25             30

Ala Leu Ser His Ala Val Leu Pro Gly Ala Ala Val Gly Tyr Met Phe
      35             40             45

Ala Gly Leu Ser Leu Pro Ala Met Gly Leu Gly Gly Val Ala Ala Gly
      50             55             60

Met Leu Met Ala Leu Leu Ala Gly Leu Val Ser Arg Phe Thr Thr Leu
      65             70             75             80

Lys Glu Asp Ala Asn Phe Ala Ala Phe Tyr Leu Ser Ser Leu Ala Ile
      85             90             95

Gly Val Val Leu Val Ser Lys Asn Gly Ser Ser Val Asp Leu Leu His
      100            105            110

Leu Leu Phe Gly Ser Val Leu Ala Val Asp Ile Pro Ala Leu Gln Leu
      115            120            125

Ile Ala Ala Val Ser Ser Leu Thr Leu Ile Thr Leu Ala Val Ile Tyr
      130            135            140

Arg Pro Leu Val Leu Glu Ser Ile Asp Pro Leu Phe Leu Lys Ser Val
      145            150            155            160

Gly Gly Lys Gly Gly Leu Trp His Val Leu Phe Leu Val Leu Val Val
```

165	170	175
Met Asn Leu Val Ser Gly Phe Gln Ala Leu Gly Thr Leu Met Ser Val		
180	185	190
Gly Leu Met Met Leu Pro Ala Ile Thr Ala Arg Leu Trp Ala Lys His		
195	200	205
Met Gly Ala Leu Ile Leu Leu Ser Val Leu Thr Ala Leu Leu Cys Gly		
210	215	220
Leu Ser Gly Leu Leu Ile Ser Tyr His Ile Glu Ile Pro Ser Gly Pro		
225	230	235 240
Ala Ile Ile Leu Cys Cys Ser Val Leu Tyr Leu Phe Ser Val Ile Leu		
245	250	255
Gly Lys Glu Gly Gly Ile Leu Thr		
260		

<210> 1161
 <211> 828
 <212> DNA
 <213> Neisseria meningitidis

<400> 1161
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 ttctcgtca tgcgccgtat gagcctgata ggcgacgcat tgagccacgc cgtcctgccc 120
 ggtgccgccc tgcgctacat gtttgccggc ttaagcctgc ccgccatggg tttgggcggc 180
 gtagccgcag gtatgctgat ggcactgctt gccggactcg tcagccgctt caccaccctg 240
 aaagaagatg ccaactttgc cgccttttat ctacgcagcc tcgccatcgg tgtagtcctc 300
 gtcagcaaaa acggcagcag cgtcgatttg ctccacctcc ttttcggctc cgtacttgcc 360
 gtcgatatte ctgccctgca actcatcgcc gccgtatcca cctcacaact gcttaccctt 420
 gccgtcatct accgcccgct cgtactcgaa agcatcgacc cctggtttct caaatctgtc 480
 ggcggcaaaag gcgggctttg gcacgtcttc tttctcgtcc tggtcgtcat gaacctcgta 540
 tccggctttc aagccctcgg cactcatg tccgtcggac ttatgatgct gccagccatt 600
 accgcccgcc tatgggcgaa gcacatgggc gactcatcc tctatccgt tctgacagcc 660
 ctgctgtgcg gcttgagcgg actgctcatt tctaccaca tcgaaattcc ttcgggtccc 720
 gccatcatcc tctgttgag cgtcctttat ctcttttccg tcatactcgg caaagaaggc 780
 ggcattctga ccaaatggct caaaaaccac cgccaccaca ccacctga 828

<210> 1162
 <211> 275
 <212> PRT
 <213> Neisseria meningitidis

<400> 1162
 Met Arg Tyr Ala Leu Ala Ser Val Phe Cys Leu Ser Leu Ser Ala Ala
 1 5 10 15
 Pro Val Gly Val Phe Leu Val Met Arg Arg Met Ser Leu Ile Gly Asp
 20 25 30
 Ala Leu Ser His Ala Val Leu Pro Gly Ala Ala Val Gly Tyr Met Phe
 35 40 45

Ala Gly Leu Ser Leu Pro Ala Met Gly Leu Gly Gly Val Ala Ala Gly
 50 55 60
 Met Leu Met Ala Leu Leu Ala Gly Leu Val Ser Arg Phe Thr Thr Leu
 65 70 75 80
 Lys Glu Asp Ala Asn Phe Ala Ala Phe Tyr Leu Ser Ser Leu Ala Ile
 85 90 95
 Gly Val Val Leu Val Ser Lys Asn Gly Ser Ser Val Asp Leu Leu His
 100 105 110
 Leu Leu Phe Gly Ser Val Leu Ala Val Asp Ile Pro Ala Leu Gln Leu
 115 120 125
 Ile Ala Ala Val Ser Thr Leu Thr Leu Leu Thr Leu Ala Val Ile Tyr
 130 135 140
 Arg Pro Leu Val Leu Glu Ser Ile Asp Pro Leu Phe Leu Lys Ser Val
 145 150 155 160
 Gly Gly Lys Gly Gly Leu Trp His Val Leu Phe Leu Val Leu Val Val
 165 170 175
 Met Asn Leu Val Ser Gly Phe Gln Ala Leu Gly Thr Leu Met Ser Val
 180 185 190
 Gly Leu Met Met Leu Pro Ala Ile Thr Ala Arg Leu Trp Ala Lys His
 195 200 205
 Met Gly Ala Leu Ile Leu Leu Ser Val Leu Thr Ala Leu Leu Cys Gly
 210 215 220
 Leu Ser Gly Leu Leu Ile Ser Tyr His Ile Glu Ile Pro Ser Gly Pro
 225 230 235 240
 Ala Ile Ile Leu Cys Cys Ser Val Leu Tyr Leu Phe Ser Val Ile Leu
 245 250 255
 Gly Lys Glu Gly Gly Ile Leu Thr Lys Trp Leu Lys Asn His Arg His
 260 265 270
 His Thr Thr
 275

<210> 1163

<211> 654

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1163

atgggattgg gtatggaaat cggcaagctg attgtggctc ttttggtgct gatcaatccg 60
 ttttagcgcgt tgtcgcttta ccttgacctg accaacggac acagcacgaa ggagcgcagg 120
 aaggtcgcgc ggacggccgc cgtcgccgtg tttgccgtga ttgcggtatt tgcgctgac 180

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ggcgggtgcgc tattgaaggt tttgggcacg agcgtcgggt cgtttcaggt cggcggcggg 240
atTTTggtgc tgctgatcgc catttcgatg atgaacggca acgacaatcc cgccaagcag 300
aatctcggcg cgcagccgga aacggggcaa gcgcgccccg cccgcaatgc aggggcgatt 360
gccgtcgtgc ccatcgccat accgatcacc atcgggtccg gcggtatttc gactgtgatt 420
atTTtatgctt cggcagccaa aacgtacagc gatatcgcgc tgattatcgc ggccgggtttg 480
gtggtcagtg cgatttgcta tgccatttta atcgttgccg ggaaggtcag ccgcctgctg 540
ggcgcgacgg ggctgacgat tttaaaccgc attatgggta tgatgctggc ggcggtatcg 600
gtggagatta ttgtgtcggg actgaaaacg atattcccgc aactggcagg ttga 654

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<210> 1164

<211> 217

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1164

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Met Gly Leu Gly Met Glu Ile Gly Lys Leu Ile Val Ala Leu Leu Val
  1             5             10             15

Leu Ile Asn Pro Phe Ser Ala Leu Ser Leu Tyr Leu Asp Leu Thr Asn
          20             25             30

Gly His Ser Thr Lys Glu Arg Arg Lys Val Ala Arg Thr Ala Ala Val
          35             40             45

Ala Val Phe Ala Val Ile Ala Val Phe Ala Leu Ile Gly Gly Ala Leu
          50             55             60

Leu Lys Val Leu Gly Ile Ser Val Gly Ser Phe Gln Val Gly Gly Gly
  65             70             75             80

Ile Leu Val Leu Leu Ile Ala Ile Ser Met Met Asn Gly Asn Asp Asn
          85             90             95

Pro Ala Lys Gln Asn Leu Gly Ala Gln Pro Glu Thr Gly Gln Ala Arg
          100            105            110

Pro Ala Arg Asn Ala Gly Ala Ile Ala Val Val Pro Ile Ala Ile Pro
          115            120            125

Ile Thr Ile Gly Pro Gly Gly Ile Ser Thr Val Ile Ile Tyr Ala Ser
          130            135            140

Ala Ala Lys Thr Tyr Ser Asp Ile Ala Leu Ile Ile Ala Ala Gly Leu
          145            150            155            160

Val Val Ser Ala Ile Cys Tyr Ala Ile Leu Ile Val Ala Gly Lys Val
          165            170            175

Ser Arg Leu Leu Gly Ala Thr Gly Leu Thr Ile Leu Asn Arg Ile Met
          180            185            190

Gly Met Met Leu Ala Ala Val Ser Val Glu Ile Ile Val Ser Gly Leu
          195            200            205

Lys Thr Ile Phe Pro Gln Leu Ala Gly

```

210

215

<210> 1165

<211> 654

<212> DNA

<213> *Neisseria meningitidis*

<400> 1165

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tttagcgcgt tgctgccttta ccttgacctg accaacgggc acagcacgaa ggagcgcagg 120
aaggtcgcgc ggacggccgc cgttgccgtg ttgcccgtga ttgcggtatt tgcgctgac 180
ggcggtagcg tgctgaaggt tttgggcatc agcgtcgggt cgtttcaggt cggcggcggg 240
atthtgggtgc tgctgatcgc catttcgatg atgaacggca acgacaatcc cgccaagcag 300
aatctcggcg cgcagccgga aacggggcag gcgcgccccg cccgcaatgc cggagcgatt 360
gccgtcgtgc ccatcgccat accgatcacc atcgccccgg gcggtatttc gaccgtgatt 420
atttacgctt cggcgggctaa aacatacggc gacatcgctg tgattatcgc ggccggtttg 480
gtggtcagtg cgatttggtta tgccatttta atcgttgccg ggaagggtcag ccgcctgctg 540
ggcgcgacgg ggctgacgat tttaaaccgc attatgggta tgatgctggc ggccggtatcg 600
gtggagatta ttgtgtcggg actgaaaacg atattcccgc aactggcagg ttga 654

```

<210> 1166

<211> 217

<212> PRT

<213> *Neisseria meningitidis*

<400> 1166

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Met Gly Leu Gly Met Glu Ile Gly Lys Leu Ile Val Ala Phe Leu Val
 1             5             10             15

Leu Ile Asn Pro Phe Ser Ala Leu Ser Leu Tyr Leu Asp Leu Thr Asn
             20             25             30

Gly His Ser Thr Lys Glu Arg Arg Lys Val Ala Arg Thr Ala Ala Val
             35             40             45

Ala Val Phe Ala Val Ile Ala Val Phe Ala Leu Ile Gly Gly Thr Leu
             50             55             60

Leu Lys Val Leu Gly Ile Ser Val Gly Ser Phe Gln Val Gly Gly Gly
             65             70             75             80

Ile Leu Val Leu Leu Ile Ala Ile Ser Met Met Asn Gly Asn Asp Asn
             85             90             95

Pro Ala Lys Gln Asn Leu Gly Ala Gln Pro Glu Thr Gly Gln Ala Arg
             100            105            110

Pro Ala Arg Asn Ala Gly Ala Ile Ala Val Val Pro Ile Ala Ile Pro
             115            120            125

Ile Thr Ile Gly Pro Gly Gly Ile Ser Thr Val Ile Ile Tyr Ala Ser
             130            135            140

Ala Ala Lys Thr Tyr Gly Asp Ile Ala Leu Ile Ile Ala Ala Gly Leu

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145 150 155 160
 Val Val Ser Ala Ile Cys Tyr Ala Ile Leu Ile Val Ala Gly Lys Val
 165 170 175
 Ser Arg Leu Leu Gly Ala Thr Gly Leu Thr Ile Leu Asn Arg Ile Met
 180 185 190
 Gly Met Met Leu Ala Ala Val Ser Val Glu Ile Ile Val Ser Gly Leu
 195 200 205
 Lys Thr Ile Phe Pro Gln Leu Ala Gly
 210 215

<210> 1167
 <211> 654
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 1167
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 aaggtcgcgc ggacggccgc cgttgccgtg tttgccgtga ttgcggtatt tgcgctgata 180
 ggcggtacgc tgctgaaggt tttgggcatc agcgtcgggt cgtttcaggt cggcggcgga 240
 attttggtgt tgctgattgc catttcgatg atgaacggca acgacaatcc cgccaagcag 300
 aatctcggcg cgcagccgga aacggggcag gtgcgccccg cccgcaatgc cggagcgatt 360
 gccgtcgtgc ccatcgccat accgatcacc atcgccccgg gcggtatttc gaccgtgatt 420
 atttacgctt cggcggctaa aacatacggc gacatcgctg tgattatcgc ggccggtttg 480
 gtggtcagtg cgatttgta tgccatttta atcgttgccg ggaagggtcag ccgcctgctg 540
 ggtgcgacgg ggctgacgat tttaaaccgt atcatgggta tgatgctggc ggcggtatcg 600
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<210> 1168
 <211> 217
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 1168
 Met Gly Leu Gly Met Glu Ile Gly Lys Leu Ile Val Ala Phe Leu Val
 1 5 10 15
 Leu Ile Asn Pro Phe Ser Ala Leu Ser Leu Tyr Leu Asp Leu Thr Asn
 20 25 30
 Gly His Ser Thr Lys Glu Arg Arg Lys Val Ala Arg Thr Ala Ala Val
 35 40 45
 Ala Val Phe Ala Val Ile Ala Val Phe Ala Leu Ile Gly Gly Thr Leu
 50 55 60
 Leu Lys Val Leu Gly Ile Ser Val Gly Ser Phe Gln Val Gly Gly Gly
 65 70 75 80
 Ile Leu Val Leu Leu Ile Ala Ile Ser Met Met Asn Gly Asn Asp Asn
 85 90 95

Pro Ala Lys Gln Asn Leu Gly Ala Gln Pro Glu Thr Gly Gln Val Arg
100 105 110

Pro Ala Arg Asn Ala Gly Ala Ile Ala Val Val Pro Ile Ala Ile Pro
115 120 125

Ile Thr Ile Gly Pro Gly Gly Ile Ser Thr Val Ile Ile Tyr Ala Ser
130 135 140

Ala Ala Lys Thr Tyr Gly Asp Ile Ala Leu Ile Ile Ala Ala Gly Leu
145 150 155 160

Val Val Ser Ala Ile Cys Tyr Ala Ile Leu Ile Val Ala Gly Lys Val
165 170 175

Ser Arg Leu Leu Gly Ala Thr Gly Leu Thr Ile Leu Asn Arg Ile Met
180 185 190

Gly Met Met Leu Ala Ala Val Ser Val Glu Ile Ile Val Ser Gly Leu
195 200 205

Lys Met Ile Phe Pro Gln Leu Ala Gly
210 215

<210> 1169
<211> 429
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1169
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gccggaaccg ccgtctttac ttggaaagac ggcggcggca acagctattc ggatgtgccg 120
aaacagcttc atcccagacca gagccaaatc ctcaacctgc ggacgctcca aaccaaaccg 180
gcggtcaagc ccaaacctgc cgtcgatacg aatgcggaca gtgcgaagga aaacgaaaag 240
gatatcgccg agaaaaacgg gcagcttgag gaagaaaaga aaaaaattgc cgaaaccgaa 300
cggcagaaca aagaagaaaa ctgccggatt tcaaaaatga acctgaaggc ggtgggaaac 360
tcaaatgcga aaaacaagga tgatttgatc cgtaaataca ataacgccgt aaacaaatac 420
tgccgttaa 429

<210> 1170
<211> 142
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1170
Met Asn Phe Ala Leu Ser Val Ile Thr Phe Thr Leu Ala Ser Phe Leu
1 5 10 15

Pro Val Pro Pro Ala Gly Thr Ala Val Phe Thr Trp Lys Asp Gly Gly
20 25 30

Gly Asn Ser Tyr Ser Asp Val Pro Lys Gln Leu His Pro Asp Gln Ser
35 40 45

Gln Ile Leu Asn Leu Arg Thr Leu Gln Thr Lys Pro Ala Val Lys Pro
 50 55 60
 Lys Pro Ala Val Asp Thr Asn Ala Asp Ser Ala Lys Glu Asn Glu Lys
 65 70 75 80
 Asp Ile Ala Glu Lys Asn Gly Gln Leu Glu Glu Glu Lys Lys Lys Ile
 85 90 95
 Ala Glu Thr Glu Arg Gln Asn Lys Glu Glu Asn Cys Arg Ile Ser Lys
 100 105 110
 Met Asn Leu Lys Ala Val Gly Asn Ser Asn Ala Lys Asn Lys Asp Asp
 115 120 125
 Leu Ile Arg Lys Tyr Asn Asn Ala Val Asn Lys Tyr Cys Arg
 130 135 140

<210> 1171
 <211> 435
 <212> DNA
 <213> Neisseria meningitidis

<400> 1171
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 aaacagcttc atcccgaacca aagccaaatc ttaaacctgc ggacgcgcca aaccaaaccg 180
 gcggtcaaac ccgcccaagc cgacgcaggg aagcgcacag acggcgcggc acaggaaaac 240
 aatcccgaca ctgccgagaa aaaccggcag cttgaggaag aaaagaaaag aattgccgaa 300
 accgaacggc agaacaaaga agaaaactgc cggatttcaa aaatgaacct gaaggcgggtg 360
 ggaaattcaa atgcaaaaaa caaggatgat ttgattcgga aatacaataa cgccgtaaac 420
 aaatactgcc gttaa 435

<210> 1172
 <211> 144
 <212> PRT
 <213> Neisseria meningitidis

<400> 1172
 Met Asn Phe Ala Leu Ser Val Ile Met Leu Thr Leu Ala Ser Phe Leu
 1 5 10 15
 Pro Val Pro Pro Ala Gly Ala Ala Val Phe Thr Trp Lys Asp Gly Gly
 20 25 30
 Gly Asn Ser Tyr Ser Asp Val Pro Lys Gln Leu His Pro Asp Gln Ser
 35 40 45
 Gln Ile Leu Asn Leu Arg Thr Arg Gln Thr Lys Pro Ala Val Lys Pro
 50 55 60
 Ala Gln Ala Asp Ala Gly Lys Arg Thr Asp Gly Ala Ala Gln Glu Asn
 65 70 75 80

Asn Pro Asp Thr Ala Glu Lys Asn Arg Gln Leu Glu Glu Glu Lys Lys
85 90 95

Arg Ile Ala Glu Thr Glu Arg Gln Asn Lys Glu Glu Asn Cys Arg Ile
100 105 110

Ser Lys Met Asn Leu Lys Ala Val Gly Asn Ser Asn Ala Lys Asn Lys
115 120 125

Asp Asp Leu Ile Arg Lys Tyr Asn Asn Ala Val Asn Lys Tyr Cys Arg
130 135 140

<210> 1173
<211> 435
<212> DNA
<213> Neisseria meningitidis

<400> 1173
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gccggagccg ccgtctttac ttggaaggac ggccggcgga acagctattc ggatgtaccg 120
aaacagcttc atcccgaaca aagccaaatc ttaaacctgc ggacgcgcca aaccaaaccg 180
gcggtcaaac ccgccaagc cgacgcaggg aagcgcacag acggcgcggc acaggaaaac 240
aatcccgaaca ctgccgagaa aaaccggcag cttgaggaag aaaagaaaag aattgccgaa 300
accgaacggc agaacaaaga agaaaactgc cggatttcaa aaatgaacct gaaagcgggtg 360
ggaaattcaa atgcaaaaaa caaggatgat ttgattcgga aatacaataa cgccgtaaac 420
aaatactgcc gttaa 435

<210> 1174
<211> 144
<212> PRT
<213> Neisseria meningitidis

<400> 1174
Met Asn Phe Ala Leu Ser Val Ile Met Leu Thr Leu Ala Ser Phe Leu
1 5 10 15

Pro Val Pro Pro Ala Gly Ala Ala Val Phe Thr Trp Lys Asp Gly Gly
20 25 30

Gly Asn Ser Tyr Ser Asp Val Pro Lys Gln Leu His Pro Asp Gln Ser
35 40 45

Gln Ile Leu Asn Leu Arg Thr Arg Gln Thr Lys Pro Ala Val Lys Pro
50 55 60

Ala Gln Ala Asp Ala Gly Lys Arg Thr Asp Gly Ala Ala Gln Glu Asn
65 70 75 80

Asn Pro Asp Thr Ala Glu Lys Asn Arg Gln Leu Glu Glu Glu Lys Lys
85 90 95

Arg Ile Ala Glu Thr Glu Arg Gln Asn Lys Glu Glu Asn Cys Arg Ile
100 105 110

Ser Lys Met Asn Leu Lys Ala Val Gly Asn Ser Asn Ala Lys Asn Lys
115 120 125

Asp Asp Leu Ile Arg Lys Tyr Asn Asn Ala Val Asn Lys Tyr Cys Arg
130 135 140

<210> 1175
<211> 897
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1175
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gcctttgaag ccttcgccgg tttttttgaa actgtctttc ttaaagcctt ctttcttgaa 180
accttcgccg cgcgttttgc cgccgaagcc ttctttgcc gggttatgat cgccgcgccg 240
gccgccgat ttcctatcgc ccagccgcc tttgcctttc ggcttgccgc ctgcggattt 300
gcgtttgcgg gccggctcca tgccttcgat ggtcagttcg ggcagtttgc ggttaatgta 360
tttttcgatt ttgtggactt tgacgtattc gttcacttcg gcaaacgtaa tcgcaatacc 420
cgtgcggcct gcgcggccgg tgcgccgat gcggtggacg tagtcttcg cctgtttcgg 480
caggtcgtag tttatgacgt gggtaatggc cgtacgtca ataccgcgtg cggcaacgctc 540
ggtggcaacc aaaattttgc agcggccttt acgcaaatcc gtcagcgtgc ggttgcgcca 600
gccctgcggc atatcgccgt gcaggcagtt ggcgcgaaa cctttttcgt acaattcatc 660
cgcatgact tcggtcatcg ctttggtgga cgtgaaaatc acacattggt cgatgttggc 720
atcgcgcagg atgtggtcga gcaggcgggt tttgtggcgc atatcgtcgc agtacaacaa 780
ctgctcttcg attttgcctt ggccgtccac gcgttcgact tcgataattt cagagtcctt 840
ggtcagtttg cgcgccagtt tgccgactgc gccgtcccaa gtggcggaga acaataa 897

<210> 1176
<211> 298
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1176
Met Pro Ser Glu Thr Arg Asn Arg Phe Gln Thr Ala Leu Val Tyr Ala
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Ala Gly Trp Gly Leu Ala Val Phe Val Thr Ala Phe Ala Phe Ala Cys
20 25 30

Lys Arg Val Ala Gly Phe Ala Phe Ala Phe Glu Ala Phe Ala Gly Phe
35 40 45

Phe Glu Thr Val Phe Leu Lys Ala Phe Phe Leu Glu Thr Phe Ala Ala
50 55 60

Arg Phe Ala Ala Glu Ala Phe Phe Ala Arg Phe Met Ile Ala Ala Pro
65 70 75 80

Ala Ala Gly Phe Pro Ile Ala Pro Ala Ala Phe Ala Phe Arg Leu Ala
85 90 95

Ala Cys Gly Phe Ala Phe Ala Gly Arg Leu His Ala Phe Asp Gly Gln
100 105 110

Phe Gly Gln Phe Ala Val Asn Val Phe Phe Asp Phe Val Asp Phe Asp
115 120 125

Val Phe Val His Phe Gly Lys Arg Asn Arg Asn Thr Arg Ala Ala Cys
130 135 140

Ala Ala Gly Ala Pro Asp Ala Val Asp Val Val Phe Arg Leu Phe Arg
145 150 155 160

Gln Val Val Val Tyr Asp Val Gly Asn Gly Arg Tyr Val Asn Thr Ala
165 170 175

Cys Gly Asn Val Gly Gly Asn Gln Asn Phe Ala Ala Ala Phe Thr Gln
180 185 190

Ile Arg Gln Arg Ala Val Ala Pro Ala Leu Arg His Ile Ala Val Gln
195 200 205

Ala Val Gly Gly Glu Thr Phe Phe Val Gln Phe Ile Arg Asp Asp Phe
210 215 220

Gly His Arg Phe Gly Gly Arg Glu Asn His Thr Leu Val Asp Val Gly
225 230 235 240

Ile Ala Gln Asp Val Val Glu Gln Ala Val Phe Val Ala His Ile Val
245 250 255

Ala Val Gln Gln Leu Leu Phe Asp Phe Ala Leu Ala Val His Ala Phe
260 265 270

Asp Phe Asp Asn Phe Arg Val Phe Gly Gln Phe Ala Arg Gln Phe Ala
275 280 285

Asp Cys Ala Val Pro Ser Gly Gly Glu Gln
290 295

<210> 1177

<211> 1275

<212> DNA

<213> Neisseria meningitidis

<400> 1177

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gcctttgaag ccttcgccgg tttttttgaa accgtctctc ttaaagcctt ctttcttgaa 180
accttcgccg cgcgtttttg cgccgaagcc ttctttgctc ggtttatgat cgccgcgcca 240
accgcgggat ttacgatcgc ccagccgcc tttgcctttc ggcttgccgc ctgcggattt 300
gcgtttgcgg gtcggttcca tgccttcgat ggtcagttcg ggcagttttc ggtaaatgta 360
tttttcgatt ttgtggactt tgacgtattc gttcacttcg gcaaacgtaa tcgcaatacc 420

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cgtgcgccct gcgcggccgg tgcgcccgat gcggtggacg tagtcttccg cctgtttcgg 480
caggtcgtag ttgataacgt gggtaatggt cggtagctcg ataccgctg cggcaacatc 540
ggtggcaacc aaaattttgc agcggccttt acgcaaatec atcagcgtgc ggttgcgcca 600
gccttgccgc atatcgccgt gcaggcagtt tgcggcgaaa cctttttcgt acagttcatc 660
cgcaatgact tcggtcatgg ctttggtgga cgtgaaaatc acgcattgat cgatattggc 720
atcgcgcaag atatgatcga gcaggcgggt tttgtggcgc atatcgtcgc agtacagcag 780
ttgttcttcg attttgcctt gatcgctccac gcgttcgact tcgatgattt caggggtcttt 840
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ctgacggctg ctgcggcgtt cttccacgat ggtttcgatg tcgtcgataa agcccatatc 960
caacatacgg tcggcttcgt ccaaaatcag cacttccaaa cgttcaaaat caactttgcc 1020
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cagggcacgg gtttggtagc cgaaagacgc gccgccgacg atgctgacgg tgcggaacca 1140
acgcatatct ttggcatacg ccagcgcggt tttctcgact tgagccgcca gttcgcgggt 1200
cggggtcaac accaaagcac gcgggccttt gcccggtttt tcgctgcgtt tggtcagttt 1260
ttgcaaagtc ggtaa 1275

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<210> 1178

<211> 424

<212> PRT

<213> Neisseria meningitidis

<400> 1178

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Met Pro Ser Glu Thr Arg Asn Arg Phe Gln Thr Ala Leu Val Tyr Ala
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Ala Gly Trp Gly Leu Ala Val Phe Val Thr Ala Phe Ala Phe Ala Cys
          20              25              30

```

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Lys Arg Ile Ala Gly Phe Ala Phe Ala Phe Glu Ala Phe Ala Gly Phe
  35              40              45

```

```

Phe Glu Thr Val Ser Leu Lys Ala Phe Phe Leu Glu Thr Phe Ala Ala
  50              55              60

```

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Arg Phe Ala Ala Glu Ala Phe Phe Ala Arg Phe Met Ile Ala Ala Pro
  65              70              75              80

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Thr Ala Gly Phe Thr Ile Ala Pro Ala Ala Phe Ala Phe Arg Leu Ala
          85              90              95

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Ala Cys Gly Phe Ala Phe Ala Gly Arg Phe His Ala Phe Asp Gly Gln
  100              105              110

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Phe Gly Gln Phe Ser Val Asn Val Phe Phe Asp Phe Val Asp Phe Asp
  115              120              125

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Val Phe Val His Phe Gly Lys Arg Asn Arg Asn Thr Arg Ala Ala Cys
  130              135              140

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Ala Ala Gly Ala Pro Asp Ala Val Asp Val Val Phe Arg Leu Phe Arg
  145              150              155              160

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Gln Val Val Val Asp Asn Val Gly Asn Gly Arg Tyr Val Asp Thr Ala
          165              170              175

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Cys Gly Asn Ile Gly Gly Asn Gln Asn Phe Ala Ala Ala Phe Thr Gln

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180					185					190						
Ile	His	Gln	Arg	Ala	Val	Ala	Pro	Ala	Leu	Arg	His	Ile	Ala	Val	Gln	
195					200					205						
Ala	Val	Cys	Gly	Glu	Thr	Phe	Phe	Val	Gln	Phe	Ile	Arg	Asn	Asp	Phe	
210					215					220						
Gly	His	Gly	Phe	Gly	Gly	Arg	Glu	Asn	His	Ala	Leu	Ile	Asp	Ile	Gly	
225					230					235					240	
Ile	Ala	Gln	Asp	Met	Ile	Glu	Gln	Ala	Val	Phe	Val	Ala	His	Ile	Val	
245					250					255						
Ala	Val	Gln	Gln	Leu	Phe	Phe	Asp	Phe	Ala	Leu	Ile	Val	His	Ala	Phe	
260					265					270						
Asp	Phe	Asp	Asp	Phe	Arg	Val	Phe	Gly	Gln	Phe	Ala	Arg	Gln	Phe	Ala	
275					280					285						
Asp	Arg	Ala	Val	Pro	Ser	Gly	Gly	Glu	Gln	Gln	Ser	Leu	Thr	Val	Ala	
290					295					300						
Arg	Arg	Cys	Phe	His	Asp	Gly	Phe	Asp	Val	Val	Asp	Lys	Ala	His	Ile	
305					310					315					320	
Gln	His	Thr	Val	Gly	Phe	Val	Gln	Asn	Gln	His	Phe	Gln	Thr	Phe	Lys	
325					330					335						
Ile	Asn	Phe	Ala	Ala	Leu	His	Gln	Val	His	Gln	Thr	Ala	Arg	Arg	Gly	
340					345					350						
Asp	Asn	Gln	Ile	Asp	Arg	Phe	Ala	Gln	Gly	Thr	Gly	Leu	Val	Ala	Glu	
355					360					365						
Arg	Arg	Ala	Ala	Asp	Asp	Ala	Asp	Gly	Ala	Glu	Pro	Thr	His	Ile	Phe	
370					375					380						
Gly	Ile	Arg	Gln	Arg	Val	Phe	Leu	Asp	Leu	Ser	Arg	Gln	Phe	Ala	Gly	
385					390					395					400	
Arg	Gly	Gln	His	Gln	Ser	Thr	Arg	Ala	Phe	Ala	Arg	Phe	Phe	Ala	Ala	
405					410					415						
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420																

<210> 1179

<211> 1275

<212> DNA

<213> Neisseria meningitidis

<400> 1179

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 gcctttgaag ccttcgccgg tttttttgaa accgtctctc ttaaagcctt ctttcttgaa 180

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accttcgccg cgcgttttgc cgccgaagcc ttctttgctc ggtttatgat cgccgcgcca 240
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gcgtttgcgg gtcggttcca tgccttcgat ggtcagttcg ggcagttttc ggtaaatgta 360
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cgtgcggcct gcgcggccgg tgcgcccgat gcggtggacg tagtcttcg cctgtttcgg 480
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ggtggcaacc aaaattttgc agcggccttt gcgcaaatac atcagcgtgc ggttgcgcca 600
gccttgccgc atatacgcgt gcaggcagtt ggccggcgaac cctttttcgt acaattcatc 660
cgcgatgact tcggtcatgg ctttggtgga cgtgaaaatc acgcattgat cgatgtcggc 720
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ttgttcttcg attttgcctt ggtcgtccac gcgttcgact tcgatgattt cagggtcttt 840
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ctgcaaagtc ggtaa 1275

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<210> 1180
 <211> 424
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 1180
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 Lys Arg Ile Ala Gly Phe Ala Phe Ala Phe Glu Ala Phe Ala Gly Phe
 35 40 45
 Phe Glu Thr Val Ser Leu Lys Ala Phe Phe Leu Glu Thr Phe Ala Ala
 50 55 60
 Arg Phe Ala Ala Glu Ala Phe Phe Ala Arg Phe Met Ile Ala Ala Pro
 65 70 75 80
 Thr Ala Gly Phe Thr Ile Ala Pro Ala Ala Phe Ala Phe Arg Leu Ala
 85 90 95
 Ala Cys Gly Phe Ala Phe Ala Gly Arg Phe His Ala Phe Asp Gly Gln
 100 105 110
 Phe Gly Gln Phe Ser Val Asn Val Phe Phe Asp Phe Val Asp Phe Asp
 115 120 125
 Val Phe Val His Phe Gly Lys Arg Asn Arg Asn Thr Arg Ala Ala Cys
 130 135 140
 Ala Ala Gly Ala Pro Asp Ala Val Asp Val Val Phe Arg Leu Phe Arg
 145 150 155 160

Gln Val Val Val Asp Asn Val Gly Asn Gly Arg Tyr Val Asp Thr Ala
 165 170 175
 Cys Gly Asn Val Gly Gly Asn Gln Asn Phe Ala Ala Ala Phe Ala Gln
 180 185 190
 Ile His Gln Arg Ala Val Ala Pro Ala Leu Arg His Ile Ala Val Gln
 195 200 205
 Ala Val Gly Gly Glu Thr Phe Phe Val Gln Phe Ile Arg Asp Asp Phe
 210 215 220
 Gly His Gly Phe Gly Gly Arg Glu Asn His Ala Leu Ile Asp Val Gly
 225 230 235 240
 Ile Ala Gln Asp Met Ile Glu Gln Ala Val Phe Val Ala His Ile Val
 245 250 255
 Ala Val Gln Gln Leu Phe Phe Asp Phe Ala Leu Val Val His Ala Phe
 260 265 270
 Asp Phe Asp Asp Phe Arg Val Phe Gly Gln Phe Ala Arg Gln Phe Ala
 275 280 285
 Asp Arg Ala Val Pro Ser Gly Gly Glu Gln Gln Ser Leu Thr Val Phe
 290 295 300
 Arg Arg Gly Phe Asp Asp Gly Phe Asp Val Val Asp Lys Ala His Ile
 305 310 315 320
 Gln His Thr Val Gly Phe Val Gln Asn Gln His Phe Gln Ala Gly Glu
 325 330 335
 Ile Asp Phe Ala Ala Leu His Gln Val His Gln Thr Ala Arg Arg Gly
 340 345 350
 Asp Asn Gln Ile Asp Arg Phe Ala Gln Gly Ala Gly Leu Val Ala Glu
 355 360 365
 Arg Cys Thr Thr Asp Asp Ala Asp Gly Thr Glu Pro Thr His Ile Phe
 370 375 380
 Gly Ile Arg Gln Arg Val Phe Leu Asp Leu Ser Arg Gln Phe Ala Gly
 385 390 395 400
 Arg Arg Gln His Gln Arg Ala Arg Ala Phe Ala Arg Phe Phe Ala Ala
 405 410 415
 Phe Gly Gln Ser Leu Gln Ser Arg
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<210> 1181
 <211> 4170
 <212> DNA

<213> Neisseria gonorrhoeae

<400> 1181

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gagggggcag accttaaaat cagccgcttc cgcttcgctg ggaaaccgtc cgaactgatg 360
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<210> 1182

<211> 1389

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1182

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      20             25             30

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      35             40             45

Ala Val Cys Phe Leu Gly Trp Ile Ala Gly Thr Glu Ala Gly Leu Arg
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Phe Gly Leu Tyr Gln Ile Pro Ser Trp Phe Gly Val Asn Ile Ser Ser
      65             70             75             80

Gln Asn Leu Lys Gly Thr Leu Leu Asp Gly Phe Asp Gly Asp Asn Trp
      85             90             95

Ser Ile Glu Thr Glu Gly Ala Asp Leu Lys Ile Ser Arg Phe Arg Phe
      100            105            110

Ala Trp Lys Pro Ser Glu Leu Met Arg Arg Ser Leu His Ile Thr Asp
      115            120            125

Ile Ser Ala Gly Asp Ile Ala Ile Val Thr Lys Pro Thr Pro Pro Lys
      130            135            140

Glu Glu Arg Pro Pro Gln Gly Leu Pro Asp Ser Ile Asp Leu Pro Ala
      145            150            155            160

Ala Val Tyr Leu Asp Arg Phe Glu Thr Gly Lys Ile Ser Met Gly Lys
      165            170            175

```

Thr	Phe	Asp	Lys	Gln	Thr	Val	Tyr	Leu	Glu	Arg	Leu	Asn	Ala	Ala	Tyr	180	185	190	
Arg	Tyr	Asp	Arg	Lys	Gly	His	Arg	Leu	Asp	Leu	Lys	Ala	Ala	Asp	Thr	195	200	205	
Pro	Trp	Ser	Ser	Ser	Ser	Gly	Ser	Ala	Ser	Val	Gly	Leu	Lys	Lys	Pro	210	215	220	
Phe	Ala	Leu	Asp	Thr	Ala	Ile	Tyr	Thr	Lys	Gly	Gly	Phe	Glu	Gly	Glu	225	230	235	240
Thr	Ile	His	Ser	Thr	Ala	Arg	Leu	Ser	Gly	Ser	Leu	Lys	Asp	Val	Arg	245	250	255	
Ala	Glu	Leu	Thr	Ile	Asp	Gly	Gly	Asn	Ile	Arg	Leu	Ser	Gly	Lys	Ser	260	265	270	
Val	Ile	His	Pro	Phe	Ala	Glu	Ser	Leu	Asp	Lys	Thr	Leu	Glu	Glu	Val	275	280	285	
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Pro	Asp	Ala	Gly	Leu	Asn	Phe	Asp	Leu	Thr	Ala	Ile	Pro	Ser	Phe	Ser	305	310	315	320
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Glu	Lys	Asp	Ile	Leu	Asp	Leu	Asn	Ile	Gly	Ile	Asn	Ser	Val	Gly	Ala	385	390	395	400
Glu	Asp	Val	Leu	Gln	Thr	Ala	Phe	Lys	Gly	Arg	Leu	Asp	Gly	Ser	Ile	405	410	415	
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Ala	Asn	Glu	Gln	Arg	Lys	Leu	Val	Phe	Asp	Thr	Val	Asn	Ile	Ser	Ala	450	455	460	
Gly	Glu	Gly	Ser	Leu	Thr	Ala	Gln	Gly	Tyr	Leu	Glu	Leu	Phe	Lys	Asp	465	470	475	480

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Ala	Gly	Glu	Leu	Ala	Lys	Glu	Lys	Phe	Thr	Gly	Lys	Met	Arg	Phe	Leu		
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Leu	Thr	Leu	Glu	Gly	Thr	Gly	Ala	Gln	His	Arg	Ile	Arg	Thr	His	Ala		
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Ala	Met	Thr	Leu	Asp	Gly	Lys	Pro	Phe	Lys	Leu	Asp	Leu	Asp	Ala	Ser		
	690					695					700						
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 Thr Val Lys Gly Ser Leu Asn Ala Ala Val Thr Leu Gly Gly Ser Ile
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 Ala Asp Pro His Leu Gly Gly Ser Ile Asn Gly Asp Lys Leu Tyr Tyr
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 1010 1015 1020
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 Arg Pro Asn Arg Arg Leu Thr Val Ser Gly Asn Thr Arg Leu Arg Tyr
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Ser Pro Gln Lys Gly Ile Ser Val Thr Gly Met Ile Lys Thr Asp Gln
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Gln Pro Gly Gly Asn Val Arg Gly Val Gly Thr Val Arg Val Ile Lys
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Gly Arg Tyr Lys Ala Tyr Gly Gln Asp Leu Asp Ile Thr Lys Gly Thr
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Ser Lys Arg Ser Arg Asn Ala Gln Thr Gly Glu Leu Asn Pro Ala Glu
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<210> 1183
<211> 4170
<212> DNA
<213> *Neisseria meningitidis*

<400> 1183

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<210> 1184

<211> 1389

<212> PRT

<213> Neisseria meningitidis

<400> 1184

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Arg Lys Met Pro Ser Glu His Arg Pro Thr Pro Pro Ala Lys Lys Arg
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```

Arg Pro Leu Leu Lys Leu Ser Ala Ala Leu Leu Ser Val Leu Ile Leu
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```

Ala Val Cys Phe Leu Gly Trp Leu Ala Gly Thr Glu Ala Gly Leu Arg
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```

```

Phe Gly Leu Tyr Gln Ile Pro Ser Trp Phe Gly Val Asn Ile Ser Ser
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```

Gln Asn Leu Lys Gly Thr Leu Leu Asp Gly Phe Asp Gly Asp Asn Trp
      85              90              95

```

```

Ser Ile Glu Thr Glu Gly Ala Asp Leu Lys Ile Ser Arg Phe Arg Phe
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```

```

Ala Trp Lys Pro Ser Glu Leu Met Arg Arg Ser Leu His Ile Thr Glu
      115             120             125

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Ile Ser Ala Gly Asp Ile Ala Ile Val Thr Lys Pro Thr Pro Pro Lys
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Glu Glu Arg Pro Pro Leu Ser Leu Pro Asp Ser Ile Asp Leu Pro Ala

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Ala Val Tyr Leu Asp Arg Phe Glu Thr Gly Lys Ile Ser Met Gly Lys						
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Ala Phe Asp Lys Gln Thr Val Tyr Leu Glu Arg Leu Asp Ala Ser Tyr						
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Arg Tyr Asp Arg Lys Gly His Arg Leu Asp Leu Lys Ala Ala Asp Thr						
	195			200		205
Pro Trp Ser Ser Ser Ser Gly Ala Ala Ser Val Gly Leu Lys Lys Pro						
	210			215		220
Phe Ala Leu Asp Thr Ala Ile Tyr Thr Lys Gly Gly Leu Glu Gly Lys						
	225			230		235
Thr Ile His Ser Thr Ala Arg Leu Ser Gly Ser Leu Lys Asp Val Arg						
	245			250		255
Ala Glu Leu Ala Ile Asp Gly Gly Asn Ile Arg Leu Ser Gly Lys Ser						
	260			265		270
Val Ile His Pro Phe Ala Glu Ser Leu Asp Lys Thr Leu Glu Glu Val						
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Leu Val Lys Gly Phe Asn Ile Asn Pro Ala Ala Phe Val Pro Ser Leu						
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Pro Asp Ala Gly Leu Asn Phe Asp Leu Thr Ala Ile Pro Ser Phe Ser						
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Asp Gly Ile Ala Leu Glu Gly Ser Leu Asp Leu Glu Asn Thr Lys Ala						
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Gly Phe Ala Asp Arg Asn Gly Ile Pro Val Arg Gln Val Leu Gly Gly						
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Phe Val Ile Arg Gln Asp Gly Thr Val His Ile Gly Asn Thr Ser Ala						
	355			360		365
Ala Leu Leu Gly Arg Gly Gly Ile Arg Leu Ser Gly Lys Ile Asp Thr						
	370			375		380
Glu Lys Asp Ile Leu Asp Leu Asn Ile Gly Ile Asn Ser Val Gly Ala						
	385			390		395
Glu Asp Val Leu Gln Thr Ala Phe Lys Gly Arg Leu Asp Gly Ser Ile						
	405			410		415
Gly Ile Gly Gly Thr Thr Ala Ser Pro Lys Ile Ser Trp Gln Leu Gly						
	420			425		430
Ile Gly Thr Ala Arg Thr Asp Gly Ser Leu Ala Ile Ala Ser Asp Pro						
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Ala Asn Gly Gln Arg Lys Leu Val Leu Asp Thr Val Asn Ile Ala Ala						

450		455		460											
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Arg 485	Leu 485	Leu 485	Lys 485	Leu 485	Asp 485	Ile 485	Arg 490	Ser 490	Arg 490	Ala 490	Phe 490	Asp 495	Pro 495	Ser 495	Arg 495
Ile 500	Asp 500	Pro 500	Gln 500	Leu 500	Pro 500	Ala 505	Gly 505	Asn 505	Ile 510	Asn 510	Gly 510	Ser 510	Ile 510	Asn 510	Leu 510
Ala 515	Gly 515	Glu 515	Leu 515	Ala 515	Lys 515	Glu 520	Lys 520	Phe 520	Thr 520	Gly 525	Lys 525	Met 525	Arg 525	Phe 525	Leu 525
Pro 530	Gly 530	Thr 530	Phe 530	Asn 530	Gly 530	Val 535	Pro 535	Ile 535	Ala 535	Gly 540	Ser 540	Ala 540	Asp 540	Ile 540	Val 540
Tyr 545	Glu 545	Ser 545	Arg 545	His 545	Leu 550	Pro 550	Arg 550	Ala 555	Ala 555	Val 555	Asp 555	Leu 555	Arg 555	Leu 555	Gly 560
Arg 565	Asn 565	Ile 565	Ile 565	Lys 565	Thr 565	Asp 570	Gly 570	Gly 570	Phe 570	Gly 575	Lys 575	Lys 575	Gly 575	Asp 575	Arg 575
Leu 580	Asn 580	Leu 580	Asn 580	Ile 580	Thr 580	Ala 585	Pro 585	Asp 585	Leu 585	Ser 585	Arg 585	Phe 590	Gly 590	Phe 590	Gly 590
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Gly 610	Gly 610	Ile 610	Arg 610	Thr 610	Phe 610	Glu 615	Thr 615	Asp 615	Leu 615	Ser 615	Gly 620	Ala 620	Ala 620	Arg 620	Asn 620
Leu 625	His 625	Ile 625	Gly 625	Lys 625	Ala 630	Ala 630	Asp 630	Ile 630	Arg 630	Ser 635	Leu 635	Asp 635	Phe 635	Thr 635	Leu 640
Lys 645	Gly 645	Ser 645	Pro 645	Asp 645	Thr 645	Ser 645	Arg 645	Pro 645	Ile 645	Arg 650	Ala 650	Asp 650	Ile 650	Lys 655	Gly 655
Ser 660	Arg 660	Leu 660	Ser 660	Leu 660	Ser 660	Gly 660	Gly 665	Ala 665	Ala 665	Val 665	Val 665	Asp 665	Thr 665	Ala 665	Asp 665
Leu 675	Met 675	Leu 675	Asp 675	Gly 675	Thr 675	Gly 675	Val 680	Gln 680	His 680	Arg 680	Ile 685	Arg 685	Thr 685	His 685	Ala 685
Ala 690	Met 690	Thr 690	Leu 690	Asp 690	Gly 690	Lys 695	Pro 695	Phe 695	Lys 695	Phe 695	Asp 695	Leu 695	Asp 695	Ala 695	Ser 695
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Leu 725	Asp 725	Ile 725	Gly 725	Gly 725	Ala 725	Phe 725	Asn 725	Leu 725	Lys 725	Leu 725	Gln 725	Asn 725	Arg 725	Met 725	Thr 725
Leu 740	Glu 740	Ala 740	Gly 740	Ala 740	Glu 740	Arg 740	Val 740	Ala 745	Ala 745	Ser 745	Ala 745	Ala 745	Asn 745	Trp 745	Gln 745
Ala 750	Met 750	Gly 750	Gly 750	Ser 750	Leu 750	Asn 750	Leu 750	Gln 750	His 750	Phe 750	Ser 750	Trp 750	Asp 750	Lys 750	Lys 750

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Leu	His	Asn	Phe	Phe	Lys	Pro	Pro	Phe	Glu	His	Asn	Leu	Val	Leu	Asn
785					790					795					800
Gly	Asp	Trp	Asp	Val	Ala	Tyr	Gly	Arg	Asn	Ala	Arg	Gly	Tyr	Leu	Asn
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Ile	Ser	Arg	Gln	Ser	Gly	Asp	Ala	Val	Leu	Pro	Gly	Gly	Gln	Ala	Leu
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Gly	Leu	Asn	Ala	Phe	Ser	Leu	Lys	Thr	Arg	Phe	Gln	Asn	Asp	Arg	Ile
		835					840					845			
Gly	Ile	Leu	Leu	Asp	Gly	Gly	Ala	Arg	Phe	Gly	Arg	Ile	Asn	Ala	Asp
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Leu	Gly	Ile	Ala	Asn	Ala	Phe	Gly	Gly	Asn	Met	Ala	Asn	Ala	Pro	Leu
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Gly	Gly	Arg	Ile	Thr	Ala	Ser	Leu	Pro	Asp	Leu	Gly	Ala	Leu	Lys	Pro
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Phe	Leu	Pro	Ala	Ala	Ala	Gln	Asn	Ile	Thr	Gly	Ser	Leu	Asn	Ala	Ala
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Gln	Ser	Arg	Ser	Phe	Asp	Thr	Ala	Pro	Leu	Gly	Gly	Arg	Leu	Asn	Leu
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Thr	Val	Ala	Asp	Ala	Glu	Val	Phe	Arg	Asn	Phe	Leu	Pro	Val	Gly	Gln
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			1045					1050					1055		
Pro	Asp	Val	Asp	Ile	Gly	Ala	Val	Phe	Asp	Lys	Tyr	Arg	Ile	Leu	Ser

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Ser Pro Gln Lys Gly Ile Ser Val Thr Gly Met Ile Lys Thr Asp Gln		
1090	1095	1100
Gly Leu Phe Gly Ser Gln Lys Ser Ser Met Pro Ser Val Gly Asp Asp		
1105	1110	1115 1120
Val Val Val Leu Gly Glu Val Lys Lys Glu Ala Ala Ala Pro Leu Pro		
1125	1130	1135
Val Asn Met Asn Leu Thr Leu Asp Leu Asn Asp Gly Ile Arg Phe Ala		
1140	1145	1150
Gly Tyr Gly Ala Asp Val Thr Ile Gly Gly Lys Leu Thr Leu Thr Ala		
1155	1160	1165
Gln Ser Gly Gly Ser Val Arg Gly Val Gly Thr Val Arg Val Ile Lys		
1170	1175	1180
Gly Arg Tyr Lys Ala Tyr Gly Gln Asp Leu Asp Ile Thr Lys Gly Thr		
1185	1190	1195 1200
Val Ser Phe Val Gly Pro Leu Asn Asp Pro Asn Leu Asn Ile Arg Ala		
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Glu Arg Arg Leu Ser Pro Val Gly Ala Gly Val Glu Ile Leu Gly Ser		
1220	1225	1230
Leu Asn Ser Pro Arg Ile Thr Leu Thr Ala Asn Glu Pro Met Ser Glu		
1235	1240	1245
Lys Asp Lys Leu Ser Trp Leu Ile Leu Asn Arg Ala Gly Ser Gly Ser		
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Ser Gly Asp Asn Ala Ala Leu Ser Ala Ala Ala Gly Ala Leu Leu Ala		
1265	1270	1275 1280
Gly Gln Ile Asn Asp Arg Ile Gly Leu Val Asp Asp Leu Gly Phe Thr		
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Ser Lys Arg Ser Arg Asn Ala Gln Thr Gly Glu Leu Asn Pro Ala Glu		
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Gln Val Leu Thr Val Gly Lys Gln Leu Thr Gly Lys Leu Tyr Ile Gly		
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Tyr Glu Tyr Ser Ile Ser Ser Ala Glu Gln Ser Val Lys Leu Ile Tyr		
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Arg Leu Thr Arg Ala Ile Gln Ala Val Ala Arg Ile Gly Ser Arg Ser		
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Ser Gly Gly Glu Leu Thr Tyr Thr, Ile Arg Phe Asp Arg Phe Ser Gly		

Ser Asp Lys Lys Asp Ser Ala Gly Asn Gly Lys Gly Lys
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<211> 4170

<212> DNA

<213> *Neisseria meningitidis*

<400> 1185

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<210> 1186

<211> 1389

<212> PRT

<213> Neisseria meningitidis

<400> 1186

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Arg Lys Met Pro Ser Glu His Arg Pro Thr Pro Pro Ala Lys Lys Arg
      20              25              30

Arg Pro Leu Leu Lys Leu Ser Ala Ala Leu Leu Ser Val Leu Ile Leu
      35              40              45

Ala Val Cys Phe Leu Gly Trp Leu Ala Gly Thr Glu Ala Gly Leu Arg
      50              55              60

Phe Gly Leu Tyr Gln Ile Pro Ser Trp Phe Gly Val Asn Ile Ser Ser
      65              70              75              80

Gln Asn Leu Lys Gly Thr Leu Leu Asp Gly Phe Asp Gly Asp Asn Trp
      85              90              95

Ser Ile Glu Thr Glu Gly Ala Asp Leu Lys Ile Ser Arg Phe Arg Phe
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Ala Trp Lys Pro Ser Glu Leu Met Arg Arg Ser Leu His Ile Thr Glu
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Ile	Ser	Ala	Gly	Asp	Ile	Ala	Ile	Val	Thr	Lys	Pro	Thr	Pro	Pro	Lys	130	135	140
Glu	Glu	Arg	Pro	Pro	Leu	Ser	Leu	Pro	Asp	Ser	Ile	Asp	Leu	Pro	Ala	145	150	155
Ala	Val	Tyr	Leu	Asp	Arg	Phe	Glu	Thr	Gly	Lys	Ile	Ser	Met	Gly	Lys	165	170	175
Ala	Phe	Asp	Lys	Gln	Thr	Val	Tyr	Leu	Glu	Arg	Leu	Asp	Ala	Ser	Tyr	180	185	190
Arg	Tyr	Asp	Arg	Lys	Gly	His	Arg	Leu	Asp	Leu	Lys	Ala	Ala	Asp	Thr	195	200	205
Pro	Trp	Ser	Ser	Ser	Ser	Gly	Ser	Ala	Ser	Val	Gly	Leu	Lys	Lys	Pro	210	215	220
Phe	Ala	Leu	Asp	Thr	Ala	Ile	Tyr	Thr	Lys	Gly	Gly	Leu	Glu	Gly	Lys	225	230	235
Thr	Ile	His	Ser	Thr	Ala	Arg	Leu	Ser	Gly	Ser	Leu	Lys	Asp	Val	Arg	245	250	255
Ala	Glu	Leu	Ala	Ile	Asp	Gly	Gly	Asn	Ile	Arg	Leu	Ser	Gly	Lys	Ser	260	265	270
Val	Ile	His	Pro	Phe	Ala	Glu	Ser	Leu	Asp	Lys	Thr	Leu	Glu	Glu	Val	275	280	285
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Pro	Asp	Ala	Gly	Leu	Asn	Phe	Asp	Leu	Thr	Ala	Ile	Pro	Ser	Phe	Ser	305	310	315
Asp	Gly	Ile	Ala	Leu	Glu	Gly	Ser	Leu	Asp	Leu	Glu	Asn	Thr	Lys	Ala	325	330	335
Gly	Phe	Ala	Asp	Arg	Asn	Gly	Ile	Pro	Val	Arg	Gln	Val	Leu	Gly	Ser	340	345	350
Phe	Val	Ile	Arg	Gln	Asp	Gly	Thr	Val	His	Ile	Gly	Asn	Thr	Ser	Val	355	360	365
Ala	Leu	Leu	Gly	Arg	Gly	Gly	Ile	Arg	Leu	Ser	Gly	Lys	Ile	Asp	Thr	370	375	380
Glu	Lys	Asp	Ile	Leu	Asp	Leu	Asn	Ile	Gly	Ile	Asn	Ser	Val	Gly	Ala	385	390	395
Glu	Asp	Val	Leu	Gln	Thr	Ala	Phe	Lys	Gly	Arg	Leu	Asp	Gly	Ser	Ile	405	410	415
Gly	Ile	Gly	Gly	Thr	Thr	Ala	Ser	Pro	Lys	Ile	Ser	Trp	Gln	Leu	Gly	420	425	430

Ile	Gly	Thr	Ala	Arg	Thr	Asp	Gly	Ser	Leu	Ala	Ile	Ala	Ser	Asp	Pro	435	440	445	
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Arg	Leu	Leu	Lys	Leu	Asp	Ile	Arg	Ser	Arg	Ala	Phe	Asp	Pro	Ser	Arg	485	490	495	
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Ala	Gly	Glu	Leu	Ala	Lys	Glu	Lys	Phe	Thr	Gly	Lys	Met	Arg	Phe	Leu	515	520	525	
Pro	Gly	Thr	Phe	Asn	Gly	Val	Pro	Ile	Ala	Gly	Ser	Ala	Asp	Ile	Val	530	535	540	
Tyr	Glu	Ser	Arg	His	Leu	Pro	Arg	Ala	Ala	Val	Asp	Leu	Arg	Leu	Gly	545	550	555	560
Arg	Asn	Ile	Ile	Lys	Thr	Asp	Gly	Gly	Phe	Gly	Lys	Lys	Gly	Asp	Arg	565	570	575	
Leu	Asn	Leu	Asn	Ile	Thr	Ala	Pro	Asp	Leu	Ser	Arg	Phe	Gly	Phe	Gly	580	585	590	
Leu	Ala	Gly	Ser	Leu	Asn	Val	Arg	Gly	His	Leu	Ser	Gly	Asp	Leu	Asp	595	600	605	
Gly	Gly	Ile	Arg	Thr	Phe	Glu	Thr	Asp	Leu	Ser	Gly	Ala	Ala	Arg	Asn	610	615	620	
Leu	His	Ile	Gly	Lys	Ala	Ala	Asp	Ile	Arg	Ser	Leu	Asp	Phe	Thr	Leu	625	630	635	640
Lys	Gly	Ser	Pro	Asp	Thr	Ser	Arg	Pro	Ile	Arg	Ala	Asp	Ile	Lys	Gly	645	650	655	
Ser	Arg	Leu	Ser	Leu	Ser	Gly	Gly	Ala	Glu	Val	Val	Asp	Thr	Ala	Asp	660	665	670	
Leu	Met	Leu	Asp	Gly	Thr	Gly	Val	Gln	His	Arg	Ile	Arg	Thr	His	Ala	675	680	685	
Ala	Met	Thr	Leu	Asp	Gly	Lys	Pro	Phe	Lys	Phe	Asp	Leu	Asp	Ala	Ser	690	695	700	
Gly	Gly	Ile	Asn	Arg	Glu	Leu	Thr	Arg	Trp	Lys	Gly	Ser	Ile	Gly	Ile	705	710	715	720
Leu	Asp	Ile	Gly	Gly	Ala	Phe	Asn	Leu	Lys	Leu	Gln	Asn	Arg	Met	Thr	725	730	735	

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Tyr Gln Ile Pro Ser Trp Phe Gly Val Asn Ile Ser Ser Gln Asn Leu
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Lys Gly Thr Leu Leu Asp Gly Phe Asp Gly Asp Asn Trp Ser Ile Glu
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Thr Glu Gly Ala Asp Leu Lys Ile Ser Arg Phe Arg Phe Ala Trp Lys
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Arg Lys Gly His Arg Leu Asp Leu Lys Ala Ala Asp Thr Pro Trp Ser
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Asp Thr Ala Ile Tyr Thr Lys Gly Gly Phe Glu Gly Glu Thr Ile His
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Gly Leu Asn Phe Asp Leu Thr Ala Ile Pro Ser Phe Ser Asp Gly Ile
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<210> 1190

<211> 1354

<212> PRT

<213> *Neisseria meningitidis*

<400> 1190

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Tyr Gln Ile Pro Ser Trp Phe Gly Val Asn Ile Ser Ser Gln Asn Leu
35 40 45

Lys Gly Thr Leu Leu Asp Gly Phe Asp Gly Asp Asn Trp Ser Ile Glu
50 55 60

Thr Glu Gly Ala Asp Leu Lys Ile Ser Arg Phe Arg Phe Ala Trp Lys
65 70 75 80

Pro Ser Glu Leu Met Arg Arg Ser Leu His Ile Thr Glu Ile Ser Ala
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Gly Asp Ile Ala Ile Val Thr Lys Pro Thr Pro Pro Lys Glu Glu Arg
100 105 110

Pro Pro Leu Ser Leu Pro Asp Ser Ile Asp Leu Pro Ala Ala Val Tyr

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Leu Ala Lys Glu Lys Phe Thr Gly Lys Met Arg Phe Leu Pro Gly Thr 485 490 495		
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Ser Leu Asn Val Arg Gly His Leu Ser Gly Asp Leu Asp Gly Gly Ile 565 570 575		
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<210> 1191

<211> 4065

<212> DNA

<213> Neisseria meningitidis

<400> 1191

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<210> 1192

<211> 1354

<212> PRT

<213> Neisseria meningitidis

<400> 1192

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 Ser Leu Ser Gly Gly Ala Glu Val Val Asp Thr Ala Asp Leu Met Leu
 625 630 635 640
 Asp Gly Thr Gly Val Gln His Arg Ile Arg Thr His Ala Ala Met Thr
 645 650 655
 Leu Asp Gly Lys Pro Phe Lys Phe Asp Leu Asp Ala Ser Gly Gly Ile
 660 665 670
 Asn Arg Glu Leu Thr Arg Trp Lys Gly Ser Ile Gly Ile Leu Asp Ile
 675 680 685
 Gly Gly Ala Phe Asn Leu Lys Leu Gln Asn Arg Met Thr Leu Glu Ala
 690 695 700
 Gly Ala Glu Arg Val Ala Ala Ser Ala Ala Asn Trp Gln Ala Met Gly
 705 710 715 720
 Gly Ser Leu Asn Leu Gln His Phe Ser Trp Asp Lys Lys Thr Gly Ile
 725 730 735
 Ser Ala Lys Gly Gly Ala His Gly Leu His Ile Ala Glu Leu His Asn

740					745					750					
Phe	Phe	Lys	Pro	Pro	Phe	Glu	His	Asn	Leu	Val	Leu	Asn	Gly	Asp	Trp
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Asp	Val	Ala	Tyr	Gly	Arg	Asn	Ala	Arg	Gly	Tyr	Leu	Asn	Ile	Ser	Arg
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Gln	Ser	Gly	Asp	Ala	Val	Leu	Pro	Gly	Gly	Gln	Ala	Leu	Gly	Leu	Asn
785					790					795					800
Ala	Phe	Ser	Leu	Lys	Thr	Arg	Phe	Gln	Asn	Asp	Arg	Ile	Gly	Ile	Leu
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Leu	Asp	Gly	Gly	Ala	Arg	Phe	Gly	Arg	Ile	Asn	Ala	Asp	Leu	Asp	Ile
			820					825					830		
Gly	Asn	Ala	Phe	Gly	Gly	Asn	Met	Ala	Asn	Ala	Pro	Leu	Gly	Gly	Arg
		835					840					845			
Ile	Thr	Ala	Ser	Leu	Pro	Asp	Leu	Gly	Thr	Leu	Lys	Pro	Phe	Leu	Pro
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Gly	Gly	Arg	Val	Gly	Ser	Pro	Ser	Val	Asn	Ala	Ala	Val	Asn	Gly	Ser
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Ser	Asn	Tyr	Gly	Lys	Ile	Asn	Gly	Asn	Ile	Thr	Val	Gly	Gln	Ser	Arg
		900						905					910		
Ser	Phe	Asp	Thr	Ala	Pro	Leu	Gly	Gly	Arg	Leu	Asn	Leu	Thr	Val	Ala
		915					920					925			
Asp	Ala	Glu	Val	Phe	Arg	Asn	Phe	Leu	Pro	Val	Gly	Gln	Thr	Val	Lys
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Gly	Ser	Leu	Asn	Ala	Ala	Val	Thr	Leu	Gly	Gly	Ser	Ile	Ala	Asp	Pro
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His	Leu	Gly	Gly	Ser	Ile	Asn	Gly	Asp	Lys	Leu	Tyr	Tyr	Arg	Asn	Gln
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Thr	Gln	Gly	Ile	Ile	Leu	Asp	Asn	Gly	Ser	Leu	Arg	Ser	His	Ile	Ala
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Gly	Arg	Lys	Trp	Val	Ile	Asp	Ser	Leu	Lys	Phe	Arg	His	Glu	Gly	Thr
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Ala	Glu	Leu	Ser	Gly	Thr	Val	Gly	Met	Glu	Asn	Ser	Gly	Pro	Asp	Val
	1010					1015					1020				
Asp	Ile	Gly	Ala	Val	Phe	Asp	Lys	Tyr	Arg	Ile	Leu	Ser	Arg	Pro	Asn
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Arg Arg Leu Thr Val Ser Gly Asn Thr Arg Leu Arg Tyr Ser Pro Gln
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 Lys Gly Ile Ser Val Thr Gly Met Ile Lys Thr Asp Gln Gly Leu Phe
 1060 1065 1070
 Gly Ser Gln Lys Ser Ser Met Pro Ser Val Gly Asp Asp Val Val Val
 1075 1080 1085
 Leu Gly Glu Val Lys Lys Glu Ala Ala Ala Pro Leu Pro Val Asn Met
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 Asn Leu Thr Leu Asp Leu Asn Asp Gly Ile Arg Phe Ala Gly Tyr Gly
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 Gly Ser Val Arg Gly Val Gly Thr Val Arg Val Ile Lys Gly Arg Tyr
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 Val Gly Pro Leu Asn Asp Pro Asn Leu Asn Ile Arg Ala Glu Arg Arg
 1170 1175 1180
 Leu Ser Pro Val Gly Ala Gly Val Glu Ile Leu Gly Ser Leu Asn Ser
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 Pro Arg Ile Thr Leu Thr Ala Asn Glu Pro Met Ser Glu Lys Asp Lys
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 1220 1225 1230
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 1235 1240 1245
 Asn Asp Arg Ile Gly Leu Val Asp Asp Leu Gly Phe Thr Ser Lys Arg
 1250 1255 1260
 Ser Arg Asn Ala Gln Thr Gly Glu Leu Asn Pro Ala Glu Gln Val Leu
 1265 1270 1275 1280
 Thr Val Gly Lys Gln Leu Thr Gly Lys Leu Tyr Ile Gly Tyr Glu Tyr
 1285 1290 1295
 Ser Ile Ser Ser Ala Glu Gln Ser Val Lys Leu Ile Tyr Arg Leu Thr
 1300 1305 1310
 Arg Ala Ile Gln Ala Val Ala Arg Ile Gly Ser Arg Ser Ser Gly Gly
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 Glu Leu Thr Tyr Thr Ile Arg Phe Asp Arg Phe Ser Gly Ser Asp Lys
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Lys Asp Ser Ala Gly Asn Ser Lys Gly Lys
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<211> 1569
<212> DNA
<213> *Neisseria gonorrhoeae*

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<212> PRT
<213> *Neisseria gonorrhoeae*

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35 40 45
Asp Thr Glu Ser Val Lys Leu Lys Pro Lys Phe Pro Val Arg Ile Asp
50 55 60

Thr Gln Asp Ser Glu Ile Lys Asp Met Val Glu Glu His Leu Pro Leu
 65 70 75 80

Ile Thr Gln Gln Gln Glu Glu Val Leu Asp Lys Glu Gln Thr Gly Phe
 85 90 95

Leu Ala Glu Glu Ala Pro Asp Asn Val Lys Thr Met Leu Arg Ser Lys
 100 105 110

Gly Tyr Phe Ser Ser Lys Val Ser Leu Thr Glu Lys Asp Gly Ala Tyr
 115 120 125

Thr Val His Ile Thr Pro Gly Pro Arg Thr Lys Ile Ala Asn Val Gly
 130 135 140

Val Ala Ile Leu Gly Asp Ile Leu Ser Asp Gly Asn Leu Ala Glu Tyr
 145 150 155 160

Tyr Arg Asn Ala Leu Glu Asn Trp Gln Gln Pro Val Gly Ser Asp Phe
 165 170 175

Asp Gln Asp Ser Trp Glu Asn Ser Lys Thr Ser Val Leu Gly Ala Val
 180 185 190

Thr Arg Lys Gly Tyr Pro Leu Ala Lys Leu Gly Asn Thr Arg Ala Ala
 195 200 205

Val Asn Pro Asp Thr Ala Thr Ala Asp Leu Asn Val Val Val Asp Ser
 210 215 220

Gly Arg Pro Ile Ala Phe Gly Asp Phe Glu Ile Thr Gly Thr Gln Arg
 225 230 235 240

Tyr Pro Glu Gln Thr Val Ser Gly Leu Ala Arg Phe Gln Pro Gly Thr
 245 250 255

Pro Tyr Asp Leu Asp Leu Leu Leu Asp Phe Gln Gln Ala Leu Glu Gln
 260 265 270

Asn Gly His Tyr Ser Gly Ala Ser Val Gln Ala Asp Phe Asp Arg Leu
 275 280 285

Pro Arg Gly Pro Arg Pro Arg Gln Ser Gln Arg Asn Arg Gly Gln Thr
 290 295 300

Pro Gln Thr Arg Asn Arg His Pro Pro Arg Phe Gly Ile Arg Phe Gly
 305 310 315 320

Arg Gln Asn Arg Leu Arg Leu Leu Gln Pro Leu Gln Gln Arg Leu Tyr
 325 330 335

Arg Leu Gly Arg Leu Gly Tyr Gly Gln Ile Arg Asn His Ala Cys Arg
 340 345 350

Arg His Gln Pro Ala Ala Gln Leu Ser Gly Gln Leu Leu Asp Lys Gln
 355 360 365

Arg Phe Leu Gln Pro Phe Asp His Pro Lys Pro Arg Lys Thr Arg Leu
 370 375 380
 Leu Arg Arg His Leu Val Cys Ala Arg Pro Arg Gly His Arg Cys Gln
 385 390 395 400
 Ala Gly Gly Gly Ile Ser Arg Arg Arg Pro Glu Asn Pro Arg Leu Gly
 405 410 415
 Cys Arg Phe Gly Gln Gln Pro Arg His Asp Ala Asp Arg Leu Leu Glu
 420 425 430
 Thr Pro Ala Ala Gln Gln Arg Ala Ala Pro Arg Lys Arg Pro Leu Pro
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 Arg Arg Gln Asn Arg Asp Asp Phe Gly His Ile Pro Val Leu His Arg
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 Ala Asn Pro His Leu Cys Pro Arg Arg Leu Phe Leu His Ala Arg Lys
 465 470 475 480
 Gln Lys Thr Arg His Val His His Thr Arg Thr Ser Gly Leu His Arg
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 Arg Arg Val Phe Arg Ala Arg Leu Arg Thr
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<210> 1195

<211> 1848

<212> DNA

<213> Neisseria meningitidis

<400> 1195

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<210> 1196

<211> 615

<212> PRT

<213> Neisseria meningitidis

<400> 1196

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Ser Glu Asn Lys Ala Ala Gly Phe Ala Leu Phe Lys Asn Lys Ser Pro
          35             40             45

Asp Thr Glu Ser Val Lys Leu Lys Pro Lys Phe Pro Val Leu Ile Asp
          50             55             60

Thr Gln Asp Ser Glu Ile Lys Asp Met Val Glu Glu His Leu Pro Leu
          65             70             75             80

Ile Thr Gln Gln Gln Glu Glu Val Leu Asp Lys Glu Gln Thr Gly Phe
          85             90             95

Leu Ala Glu Glu Ala Pro Asp Asn Val Lys Thr Met Leu Arg Ser Lys
          100            105            110

Gly Tyr Phe Ser Ser Lys Val Ser Leu Thr Glu Lys Asp Gly Ala Tyr
          115            120            125

Thr Val His Ile Thr Pro Gly Pro Arg Thr Lys Ile Ala Asn Val Gly
          130            135            140

Val Ala Ile Leu Gly Asp Ile Leu Ser Asp Gly Asn Leu Ala Glu Tyr
          145            150            155            160

Tyr Arg Asn Ala Leu Glu Asn Trp Gln Gln Pro Val Gly Ser Asp Phe
          165            170            175

Asp Gln Asp Ser Trp Glu Asn Ser Lys Thr Ser Val Leu Gly Ala Val
          180            185            190

Thr Arg Lys Ala Tyr Pro Leu Ala Lys Leu Gly Asn Thr Gln Ala Ala
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Val	Asn	Pro	Asp	Thr	Ala	Thr	Ala	Asp	Leu	Asn	Val	Val	Val	Asp	Ser	210	215	220	
Gly	Arg	Pro	Ile	Ala	Phe	Gly	Asp	Phe	Glu	Ile	Thr	Gly	Thr	Gln	Arg	225	230	235	240
Tyr	Pro	Glu	Gln	Ile	Val	Ser	Gly	Leu	Ala	Arg	Phe	Gln	Pro	Gly	Met	245	250	255	
Pro	Tyr	Asp	Leu	Asp	Leu	Leu	Leu	Asp	Phe	Gln	Gln	Ala	Leu	Glu	Gln	260	265	270	
Asn	Gly	His	Tyr	Ser	Gly	Ala	Ser	Val	Gln	Ala	Asp	Phe	Asp	Arg	Leu	275	280	285	
Gln	Gly	Asp	Arg	Val	Pro	Val	Lys	Val	Ser	Val	Thr	Glu	Val	Lys	Arg	290	295	300	
His	Lys	Leu	Glu	Thr	Gly	Ile	Arg	Leu	Asp	Ser	Glu	Tyr	Gly	Leu	Gly	305	310	315	320
Gly	Lys	Ile	Ala	Tyr	Asp	Tyr	Tyr	Asn	Leu	Phe	Asn	Lys	Gly	Tyr	Ile	325	330	335	
Gly	Ser	Val	Val	Trp	Asp	Met	Asp	Lys	Tyr	Glu	Thr	Thr	Leu	Ala	Ala	340	345	350	
Gly	Ile	Ser	Gln	Pro	Arg	Asn	Tyr	Arg	Gly	Asn	Tyr	Trp	Thr	Ser	Asn	355	360	365	
Val	Ser	Tyr	Asn	Arg	Ser	Thr	Thr	Gln	Asn	Leu	Glu	Lys	Arg	Ala	Phe	370	375	380	
Ser	Gly	Gly	Val	Trp	Tyr	Val	Arg	Asp	Arg	Ala	Gly	Ile	Asp	Ala	Arg	385	390	395	400
Leu	Gly	Ala	Glu	Phe	Leu	Ala	Glu	Gly	Arg	Lys	Ile	Pro	Gly	Ser	Ala	405	410	415	
Val	Asp	Leu	Gly	Asn	Ser	His	Ala	Thr	Met	Leu	Thr	Ala	Ser	Trp	Lys	420	425	430	
Arg	Gln	Leu	Leu	Asn	Asn	Val	Leu	His	Pro	Glu	Asn	Gly	His	Tyr	Leu	435	440	445	
Asp	Gly	Lys	Ile	Gly	Thr	Thr	Leu	Gly	Thr	Phe	Leu	Ser	Ser	Thr	Ala	450	455	460	
Leu	Ile	Arg	Thr	Ser	Ala	Arg	Ala	Gly	Tyr	Phe	Phe	Thr	Pro	Glu	Asn	465	470	475	480
Lys	Lys	Leu	Gly	Thr	Phe	Ile	Ile	Arg	Gly	Gln	Ala	Gly	Tyr	Thr	Val	485	490	495	
Ala	Arg	Asp	Asn	Ala	Asp	Val	Pro	Ser	Gly	Leu	Met	Phe	Arg	Ser	Gly				

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<210> 1198

<211> 615

<212> PRT

<213> Neisseria meningitidis

<400> 1198

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Ser	Glu	Asn	Lys	Ala	Ala	Gly	Phe	Ala	Leu	Phe	Lys	Asn	Lys	Ser	Pro	
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	50					55					60					
Thr	Gln	Asp	Ser	Glu	Ile	Lys	Asp	Met	Val	Glu	Glu	His	Leu	Pro	Leu	
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Ile	Thr	Gln	Gln	Gln	Glu	Glu	Val	Leu	Asp	Lys	Glu	Gln	Thr	Gly	Phe	
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Leu	Ala	Glu	Glu	Ala	Pro	Asp	Asn	Val	Lys	Thr	Met	Leu	Arg	Ser	Lys	
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Gly	Tyr	Phe	Ser	Ser	Lys	Val	Ser	Leu	Thr	Glu	Lys	Asp	Gly	Ala	Tyr	
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Thr	Val	His	Ile	Thr	Pro	Gly	Pro	Arg	Thr	Lys	Ile	Ala	Asn	Val	Gly	
	130					135					140					
Val	Ala	Ile	Leu	Gly	Asp	Ile	Leu	Ser	Asp	Gly	Asn	Leu	Ala	Glu	Tyr	
	145				150					155					160	
Tyr	Arg	Asn	Ala	Leu	Glu	Asn	Trp	Gln	Gln	Pro	Val	Gly	Ser	Asp	Phe	
			165						170					175		
Asp	Gln	Asp	Ser	Trp	Glu	Asn	Ser	Lys	Thr	Ser	Val	Leu	Gly	Ala	Val	
		180						185					190			
Thr	Arg	Lys	Ala	Tyr	Pro	Leu	Ala	Lys	Leu	Gly	Asn	Thr	Arg	Ala	Ala	
		195				200						205				
Val	Asn	Pro	Asp	Thr	Ala	Thr	Ala	Asp	Leu	Asn	Val	Val	Val	Asp	Ser	
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 Asn Gly His Tyr Ser Gly Ala Ser Val Gln Ala Asp Phe Asp Arg Leu
 275 280 285
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 290 295 300
 His Lys Leu Glu Thr Gly Ile Arg Leu Asp Ser Glu Tyr Gly Leu Gly
 305 310 315 320
 Gly Lys Ile Ala Tyr Asp Tyr Tyr Asn Leu Phe Asn Lys Gly Tyr Ile
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 Gly Ser Val Val Trp Asp Met Asp Lys Tyr Glu Thr Thr Leu Ala Ala
 340 345 350
 Gly Ile Ser Gln Pro Arg Asn Tyr Arg Gly Asn Tyr Trp Thr Ser Asn
 355 360 365
 Val Ser Tyr Asn Arg Ser Thr Thr Gln Asn Leu Glu Lys Arg Ala Phe
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 Ser Gly Gly Ile Trp Tyr Val Arg Asp Arg Ala Gly Ile Asp Ala Arg
 385 390 395 400
 Leu Gly Ala Glu Phe Leu Ala Glu Gly Arg Lys Ile Pro Gly Ser Asp
 405 410 415
 Ile Asp Leu Gly Asn Ser His Ala Thr Met Leu Thr Ala Ser Trp Lys
 420 425 430
 Arg Gln Leu Leu Asn Asn Val Leu His Pro Glu Asn Gly His Tyr Leu
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 Asp Gly Lys Ile Gly Thr Thr Leu Gly Ala Phe Leu Ser Ser Thr Ala
 450 455 460
 Leu Ile Arg Thr Ser Ala Arg Ala Gly Tyr Phe Phe Thr Pro Glu Asn
 465 470 475 480
 Lys Lys Leu Gly Thr Phe Ile Ile Arg Gly Gln Ala Gly Tyr Thr Val
 485 490 495
 Ala Arg Asp Asn Ala Asn Val Pro Ser Gly Leu Met Phe Arg Ser Gly
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 Gly Ala Ser Ser Val Arg Gly Tyr Glu Leu Asp Ser Ile Gly Leu Ala
 515 520 525
 Gly Pro Asn Gly Ser Val Leu Pro Glu Arg Ala Leu Leu Val Gly Ser
 530 535 540

Leu Glu Tyr Gln Leu Pro Phe Thr Arg Thr Leu Ser Gly Ala Val Phe
545 550 555 560

His Asp Met Gly Asp Ala Ala Ala Asn Phe Lys Arg Met Lys Leu Lys
565 570 575

His Gly Ser Gly Leu Gly Val Arg Trp Phe Ser Pro Leu Ala Pro Phe
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Ser Phe Asp Ile Ala Tyr Gly His Ser Asp Lys Lys Ile Arg Trp His
595 600 605

Ile Ser Leu Gly Thr Arg Phe
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<210> 1199

<211> 1290

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1199

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<210> 1200

<211> 429

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1200

Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Phe Pro Leu Ser
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Ala Cys Gly Gly Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
20 25 30

Thr	Pro	Ser	Lys	Pro	Ala	Ala	Pro	Val	Val	Ala	Glu	Asn	Ala	Gly	Glu	35	40	45
Gly	Val	Leu	Pro	Lys	Glu	Lys	Lys	Asp	Glu	Glu	Ala	Ala	Gly	Gly	Ala	50	55	60
Pro	Gln	Ala	Asp	Thr	Gln	Asp	Ala	Thr	Ala	Gly	Glu	Gly	Ser	Gln	Asp	65	70	75
Met	Ala	Ala	Val	Ser	Ala	Glu	Asn	Thr	Gly	Asn	Gly	Gly	Ala	Ala	Thr	85	90	95
Thr	Asp	Asn	Pro	Lys	Asn	Glu	Asp	Ala	Gly	Ala	Gln	Asn	Asp	Met	Pro	100	105	110
Gln	Asn	Ala	Ala	Glu	Ser	Ala	Asn	Gln	Thr	Gly	Asn	Asn	Gln	Pro	Ala	115	120	125
Gly	Ser	Ser	Asp	Ser	Ala	Pro	Ala	Ser	Asn	Pro	Ala	Pro	Ala	Asn	Gly	130	135	140
Gly	Ser	Asp	Phe	Gly	Arg	Thr	Asn	Val	Gly	Asn	Ser	Val	Val	Ile	Asp	145	150	155
Gly	Pro	Ser	Gln	Asn	Ile	Thr	Leu	Thr	His	Cys	Lys	Gly	Asp	Ser	Cys	165	170	175
Asn	Gly	Asp	Asn	Leu	Leu	Asp	Glu	Glu	Ala	Pro	Ser	Lys	Ser	Glu	Phe	180	185	190
Glu	Lys	Leu	Ser	Asp	Glu	Glu	Lys	Ile	Lys	Arg	Tyr	Lys	Lys	Asp	Glu	195	200	205
Gln	Arg	Glu	Asn	Phe	Val	Gly	Leu	Val	Ala	Asp	Arg	Val	Lys	Lys	Asp	210	215	220
Gly	Thr	Asn	Lys	Tyr	Ile	Ile	Phe	Tyr	Thr	Asp	Lys	Pro	Pro	Thr	Arg	225	230	235
Ser	Ala	Arg	Ser	Arg	Arg	Ser	Leu	Pro	Ala	Glu	Ile	Pro	Leu	Ile	Pro	245	250	255
Val	Asn	Gln	Ala	Asp	Thr	Leu	Ile	Val	Asp	Gly	Glu	Ala	Val	Ser	Leu	260	265	270
Thr	Gly	His	Ser	Gly	Asn	Ile	Phe	Ala	Pro	Glu	Gly	Asn	Tyr	Arg	Tyr	275	280	285
Leu	Thr	Tyr	Gly	Ala	Glu	Lys	Leu	Pro	Gly	Gly	Ser	Tyr	Ala	Leu	Arg	290	295	300
Val	Gln	Gly	Glu	Pro	Ala	Lys	Gly	Glu	Met	Leu	Val	Gly	Thr	Ala	Val	305	310	315
Tyr	Asn	Gly	Glu	Val	Leu	His	Phe	His	Met	Glu	Asn	Gly	Arg	Pro	Tyr	325	330	335

Pro Ser Gly Gly Arg Phe Ala Ala Lys Val Asp Phe Gly Ser Lys Ser
340 345 350

Val Asp Gly Ile Ile Asp Ser Gly Asp Asp Leu His Met Gly Thr Gln
355 360 365

Lys Phe Lys Ala Ala Ile Asp Gly Asn Gly Phe Lys Gly Thr Trp Thr
370 375 380

Glu Asn Gly Gly Gly Asp Val Ser Gly Arg Phe Tyr Gly Pro Ala Gly
385 390 395 400

Glu Glu Val Ala Gly Lys Tyr Ser Tyr Arg Pro Thr Asp Ala Glu Lys
405 410 415

Gly Gly Phe Gly Val Phe Ala Gly Lys Lys Asp Arg Asp
420 425

<210> 1201

<211> 1467

<212> DNA

<213> Neisseria meningitidis

<400> 1201

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<210> 1202

<211> 488

<212> PRT

<213> Neisseria meningitidis

<400> 1202

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		20						25					30		
Thr	Leu	Ser	Lys	Pro	Ala	Ala	Pro	Val	Val	Ser	Glu	Lys	Glu	Thr	Glu
		35					40					45			
Ala	Lys	Glu	Asp	Ala	Pro	Gln	Ala	Gly	Ser	Gln	Gly	Gln	Gly	Ala	Pro
	50					55					60				
Ser	Ala	Gln	Gly	Ser	Gln	Asp	Met	Ala	Ala	Val	Ser	Glu	Glu	Asn	Thr
65					70					75					80
Gly	Asn	Gly	Gly	Ala	Val	Thr	Ala	Asp	Asn	Pro	Lys	Asn	Glu	Asp	Glu
				85					90					95	
Val	Ala	Gln	Asn	Asp	Met	Pro	Gln	Asn	Ala	Ala	Gly	Thr	Asp	Ser	Ser
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Thr	Pro	Asn	His	Thr	Pro	Asp	Pro	Asn	Met	Leu	Ala	Gly	Asn	Met	Glu
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Asn	Gln	Ala	Thr	Asp	Ala	Gly	Glu	Ser	Ser	Gln	Pro	Ala	Asn	Gln	Pro
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Asp	Met	Ala	Asn	Ala	Ala	Asp	Gly	Met	Gln	Gly	Asp	Asp	Pro	Ser	Ala
145					150					155					160
Gly	Gly	Gln	Asn	Ala	Gly	Asn	Thr	Ala	Ala	Gln	Gly	Ala	Asn	Gln	Ala
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			180					185					190		
Pro	Ala	Pro	Ala	Asn	Gly	Gly	Ser	Asn	Phe	Gly	Arg	Val	Asp	Leu	Ala
		195					200					205			
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	210					215					220				
Cys	Lys	Gly	Asp	Ser	Cys	Ser	Gly	Asn	Asn	Phe	Leu	Asp	Glu	Glu	Val
225					230					235					240
Gln	Leu	Lys	Ser	Glu	Phe	Glu	Lys	Leu	Ser	Asp	Ala	Asp	Lys	Ile	Ser
			245						250					255	
Asn	Tyr	Lys	Lys	Asp	Gly	Lys	Asn	Asp	Lys	Phe	Val	Gly	Leu	Val	Ala
		260						265					270		
Asp	Ser	Val	Gln	Met	Lys	Gly	Ile	Asn	Gln	Tyr	Ile	Ile	Phe	Tyr	Lys
		275					280					285			
Pro	Lys	Pro	Thr	Ser	Phe	Ala	Arg	Phe	Arg	Arg	Ser	Ala	Arg	Ser	Arg

290		295		300
Arg Ser Leu Pro Ala Glu Met Pro Leu Ile Pro Val Asn Gln Ala Asp				
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Thr Leu Ile Val Asp Gly Glu Ala Val Ser Leu Thr Gly His Ser Gly				
	325		330	335
Asn Ile Phe Ala Pro Glu Gly Asn Tyr Arg Tyr Leu Thr Tyr Gly Ala				
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Glu Lys Leu Pro Gly Gly Ser Tyr Ala Leu Arg Val Gln Gly Glu Pro				
	355		360	365
Ala Lys Gly Glu Met Leu Ala Gly Ala Ala Val Tyr Asn Gly Glu Val				
	370		375	380
Leu His Phe His Thr Glu Asn Gly Arg Pro Tyr Pro Thr Arg Gly Arg				
	385		390	395 400
Phe Ala Ala Lys Val Asp Phe Gly Ser Lys Ser Val Asp Gly Ile Ile				
	405		410	415
Asp Ser Gly Asp Asp Leu His Met Gly Thr Gln Lys Phe Lys Ala Ala				
	420		425	430
Ile Asp Gly Asn Gly Phe Lys Gly Thr Trp Thr Glu Asn Gly Ser Gly				
	435		440	445
Asp Val Ser Gly Lys Phe Tyr Gly Pro Ala Gly Glu Glu Val Ala Gly				
	450		455	460
Lys Tyr Ser Tyr Arg Pro Thr Asp Ala Glu Lys Gly Gly Phe Gly Val				
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Phe Ala Gly Lys Lys Glu Gln Asp				
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<210> 1203

<211> 1494

<212> DNA

<213> Neisseria meningitidis

<400> 1203

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cttgacagcg gttcggaaaa tgtaacgttg acacattgta aagacaaagt atgcgataga 720

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<210> 1204

<211> 497

<212> PRT

<213> *Neisseria meningitidis*

<400> 1204

Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Val Ala Leu Ser
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Ala Cys Gly Gly Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
20 25 30

Thr Leu Ser Lys Pro Ala Ala Pro Val Val Thr Glu Asp Val Gly Glu
35 40 45

Glu Val Leu Pro Lys Glu Lys Lys Asp Glu Glu Ala Val Ser Gly Ala
50 55 60

Pro Gln Ala Asp Thr Gln Asp Ala Thr Ala Gly Lys Gly Gly Gln Asp
65 70 75 80

Met Ala Ala Val Ser Ala Glu Asn Thr Gly Asn Gly Gly Ala Ala Thr
85 90 95

Thr Asp Asn Pro Glu Asn Lys Asp Glu Gly Pro Gln Asn Asp Met Pro
100 105 110

Gln Asn Ala Ala Asp Thr Asp Ser Ser Thr Pro Asn His Thr Pro Ala
115 120 125

Pro Asn Met Pro Thr Arg Asp Met Gly Asn Gln Ala Pro Asp Ala Gly
130 135 140

Glu Ser Ala Gln Pro Ala Asn Gln Pro Asp Met Ala Asn Ala Ala Asp
145 150 155 160

Gly Met Gln Gly Asp Asp Pro Ser Ala Gly Glu Asn Ala Gly Asn Thr
165 170 175

Ala Asp Gln Ala Ala Asn Gln Ala Glu Asn Asn Gln Val Gly Gly Ser
180 185 190

Gln Asn Pro Ala Ser Ser Thr Asn Pro Asn Ala Thr Asn Gly Gly Ser
 195 200 205
 Asp Phe Gly Arg Ile Asn Val Ala Asn Gly Ile Lys Leu Asp Ser Gly
 210 215 220
 Ser Glu Asn Val Thr Leu Thr His Cys Lys Asp Lys Val Cys Asp Arg
 225 230 235 240
 Asp Phe Leu Asp Glu Glu Ala Pro Pro Lys Ser Glu Phe Glu Lys Leu
 245 250 255
 Ser Asp Glu Glu Lys Ile Asn Lys Tyr Lys Lys Asp Glu Gln Arg Glu
 260 265 270
 Asn Phe Val Gly Leu Val Ala Asp Arg Val Glu Lys Asn Gly Thr Asn
 275 280 285
 Lys Tyr Val Ile Ile Tyr Lys Asp Lys Ser Ala Ser Ser Ser Ser Ala
 290 295 300
 Arg Phe Arg Arg Ser Ala Arg Ser Arg Arg Ser Leu Pro Ala Glu Met
 305 310 315 320
 Pro Leu Ile Pro Val Asn Gln Ala Asp Thr Leu Ile Val Asp Gly Glu
 325 330 335
 Ala Val Ser Leu Thr Gly His Ser Gly Asn Ile Phe Ala Pro Glu Gly
 340 345 350
 Asn Tyr Arg Tyr Leu Thr Tyr Gly Ala Glu Lys Leu Ser Gly Gly Ser
 355 360 365
 Tyr Ala Leu Ser Val Gln Gly Glu Pro Ala Lys Gly Glu Met Leu Ala
 370 375 380
 Gly Thr Ala Val Tyr Asn Gly Glu Val Leu His Phe His Met Glu Asn
 385 390 395 400
 Gly Arg Pro Ser Pro Ser Gly Gly Arg Phe Ala Ala Lys Val Asp Phe
 405 410 415
 Gly Ser Lys Ser Val Asp Gly Ile Ile Asp Ser Gly Asp Asp Leu His
 420 425 430
 Met Gly Thr Gln Lys Phe Lys Ala Val Ile Asp Gly Asn Gly Phe Lys
 435 440 445
 Gly Thr Trp Thr Glu Asn Gly Gly Gly Asp Val Ser Gly Arg Phe Tyr
 450 455 460
 Gly Pro Ala Gly Glu Glu Val Ala Gly Lys Tyr Ser Tyr Arg Pro Thr
 465 470 475 480
 Asp Ala Glu Lys Gly Gly Phe Gly Val Phe Ala Gly Lys Lys Glu Gln
 485 490 495

Asp

<210> 1205
<211> 549
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1205
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cggagcccgg acttttctcc ccgtatgcct tacgcgatac gcggcgactg tctgcccgtc 360
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tcagacggca tacagcctaa actacacacc ctgtttcagg ctggcttcga tgaagccgtc 480
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gatgcgtga 549

<210> 1206
<211> 182
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1206
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20 25 30
Ser Ala Gly Ser Val Ile Ala Phe Cys Leu Val Leu Leu Arg Met Gly
35 40 45
Phe Gly Leu Pro His Ile Val Thr Lys Cys Ala Val Arg Pro Tyr Arg
50 55 60
Thr Phe Ser Pro Leu Pro Val Leu Pro Lys Gln Pro Ser Ala Val Leu
65 70 75 80
Leu Ser Val Pro Leu Ser Val Ala Leu Pro Arg Pro Ala Val Asn Arg
85 90 95
His Ser Thr Leu Arg Ser Pro Asp Phe Pro Pro Arg Met Pro Tyr Ala
100 105 110
Ile Arg Gly Asp Cys Leu Pro Val Pro Cys Ala Ala Arg Ile Ile Thr
115 120 125
Arg Asn Ala Lys Met Pro Ser Glu Thr Val Gln Val Ser Asp Gly Ile
130 135 140
Gln Pro Lys Leu His Thr Leu Phe Gln Ala Gly Phe Asp Glu Ala Val

145	150	155	160
Gln Val Ala Val Gln Tyr Gly Phe Val Val Ala Asp Phe Val Ala Cys			
	165	170	175
Thr Gln Val Phe Asp Ala			
	180		

<210> 1207
 <211> 549
 <212> DNA
 <213> Neisseria meningitidis

<400> 1207
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<210> 1208
 <211> 182
 <212> PRT
 <213> Neisseria meningitidis

<400> 1208
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 Ser Ala Gly Ser Val Ile Ala Phe Cys Leu Val Leu Leu Arg Met Gly
 35 40 45
 Phe Gly Leu Pro His Ile Val Thr Lys Cys Ala Val Arg Pro Tyr Arg
 50 55 60
 Thr Phe Ser Pro Leu Pro Val Leu Pro Lys Gln Pro Ser Ala Val Leu
 65 70 75 80
 Leu Ser Val Pro Leu Ser Val Ala Leu Pro Arg Pro Ala Val Asn Arg
 85 90 95
 His Ser Thr Leu Arg Ser Pro Asp Phe Pro Pro Arg Met Pro Tyr Ala
 100 105 110
 Ile Arg Gly Asp Cys Leu Pro Val Pro Cys Ala Ala Arg Ile Ile Thr
 115 120 125

Arg Asn Thr Lys Met Pro Ser Glu Thr Val Gln Val Ser Asp Gly Ile
130 135 140

Gln Pro Lys Leu His Ala Leu Phe Gln Ala Gly Phe Asp Glu Ala Val
145 150 155 160

Gln Val Ala Ile Gln Tyr Gly Phe Gly Val Ala Asp Phe Val Ala Cys
165 170 175

Thr Gln Val Phe Asp Thr
180

<210> 1209

<211> 549

<212> DNA

<213> Neisseria meningitidis

<400> 1209

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<210> 1210

<211> 182

<212> PRT

<213> Neisseria meningitidis

<400> 1210

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35 40 45

Phe Gly Leu Pro His Ile Val Thr Lys Cys Ala Val Arg Pro Tyr Arg
50 55 60

Thr Phe Ser Pro Leu Pro Val Leu Pro Lys Gln Pro Ser Ala Val Leu
65 70 75 80

Leu Ser Val Pro Leu Ser Val Ala Leu Pro Arg Pro Ala Val Asn Arg
85 90 95

His Ser Thr Leu Arg Ser Pro Asp Phe Pro Pro Arg Met Pro Tyr Ala

100 105 110
 Ile Arg Gly Asp Cys Leu Pro Val Pro Cys Ala Ala Arg Ile Ile Thr
 115 120 125
 Arg Asn Ala Lys Met Pro Ser Glu Thr Val Gln Val Ser Asp Gly Ile
 130 135 140
 Gln Pro Lys Leu His Ala Leu Phe Gln Ala Gly Phe Asp Lys Ala Val
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 Gln Val Ala Val Gln Tyr Gly Phe Gly Val Ala Asp Phe Val Ala Cys
 165 170 175
 Ala Gln Val Phe Asn Ala
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<210> 1211
 <211> 1179
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1211
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 aaaaaggcgcg atttgattgc ggaaatcaat tcgaccacgc agaccaacac gatcgatatg 300
 gaaaaatcca aattggaaac gtatcaggcg aagctggtgt ccgcacagat tgcattgggc 360
 agcgcggaata aaaaatataa gcgtcaggcg gcgttgtgga aggatgatgc gacctctaaa 420
 gaagatttgg aaagcgcgca ggatgcgctt gccgcgcgca aagccaatgt tgccgagttg 480
 aaggctttaa tcagacagag caaaatttcc atcaataccg ccgagtcgga tttgggctac 540
 acgcgcatta ccgcgacgat ggacggcacg gtggtggcga ttcccgtgga agaggggcag 600
 actgtgaacg cggcgcgagtc tacgccgacg attgtccaat tggcgaatct ggatatgatg 660
 ttgaacaaaa tgcagattgc cgagggcgat attaccaagg tgaaggcggg gcaggatatt 720
 tcgtttacga ttttgtccga accggatacg ccgattaagg cgaagctcga cagcgtcgac 780
 cccgggctga ccacgatgtc gtcggggcggc tacaacagca gtacggatac ggcttccaat 840
 gcggtctatt attatgcccg ttcgtttgtg ccgaatccgg acggcaaaact cgccacgggg 900
 atgacgacgc agaatacggg tgaaatcgac ggtgtgaaaa atgtgttgct tattccgtcg 960
 ctgaccgtga aaaatcgcg cggaaggcg ttcgtacgcy tgttggtgac ggacggcaag 1020
 gcagtggaaac gcgaaatccg gaccggtatg aaagacagta tgaataccga agtgaaaagc 1080
 gggttgaaag aggggggacaa agtgggtcatc tccgaaataa ccgccgccga gcagcaggaa 1140
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<210> 1212
 <211> 392
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 1212
 Met Ala Lys Met Met Lys Trp Ala Ala Val Ala Ala Val Ala Ala Ala
 1 5 10 15
 Ala Val Trp Gly Gly Trp Ser Tyr Leu Lys Pro Glu Pro Gln Ala Ala
 20 25 30

Tyr Ile Thr Glu Ala Val Arg Arg Gly Asp Ile Ser Arg Thr Val Ser
 35 40 45
 Ala Thr Gly Glu Ile Ser Pro Ser Asn Leu Val Ser Val Gly Ala Gln
 50 55 60
 Ala Ser Gly Gln Ile Lys Lys Leu Tyr Val Lys Leu Gly Gln Gln Val
 65 70 75 80
 Lys Lys Gly Asp Leu Ile Ala Glu Ile Asn Ser Thr Thr Gln Thr Asn
 85 90 95
 Thr Ile Asp Met Glu Lys Ser Lys Leu Glu Thr Tyr Gln Ala Lys Leu
 100 105 110
 Val Ser Ala Gln Ile Ala Leu Gly Ser Ala Glu Lys Lys Tyr Lys Arg
 115 120 125
 Gln Ala Ala Leu Trp Lys Asp Asp Ala Thr Ser Lys Glu Asp Leu Glu
 130 135 140
 Ser Ala Gln Asp Ala Leu Ala Ala Ala Lys Ala Asn Val Ala Glu Leu
 145 150 155 160
 Lys Ala Leu Ile Arg Gln Ser Lys Ile Ser Ile Asn Thr Ala Glu Ser
 165 170 175
 Asp Leu Gly Tyr Thr Arg Ile Thr Ala Thr Met Asp Gly Thr Val Val
 180 185 190
 Ala Ile Pro Val Glu Glu Gly Gln Thr Val Asn Ala Ala Gln Ser Thr
 195 200 205
 Pro Thr Ile Val Gln Leu Ala Asn Leu Asp Met Met Leu Asn Lys Met
 210 215 220
 Gln Ile Ala Glu Gly Asp Ile Thr Lys Val Lys Ala Gly Gln Asp Ile
 225 230 235 240
 Ser Phe Thr Ile Leu Ser Glu Pro Asp Thr Pro Ile Lys Ala Lys Leu
 245 250 255
 Asp Ser Val Asp Pro Gly Leu Thr Thr Met Ser Ser Gly Gly Tyr Asn
 260 265 270
 Ser Ser Thr Asp Thr Ala Ser Asn Ala Val Tyr Tyr Tyr Ala Arg Ser
 275 280 285
 Phe Val Pro Asn Pro Asp Gly Lys Leu Ala Thr Gly Met Thr Thr Gln
 290 295 300
 Asn Thr Val Glu Ile Asp Gly Val Lys Asn Val Leu Leu Ile Pro Ser
 305 310 315 320
 Leu Thr Val Lys Asn Arg Gly Gly Lys Ala Phe Val Arg Val Leu Gly
 325 330 335

Ala Asp Gly Lys Ala Val Glu Arg Glu Ile Arg Thr Gly Met Lys Asp
340 345 350

Ser Met Asn Thr Glu Val Lys Ser Gly Leu Lys Glu Gly Asp Lys Val
355 360 365

Val Ile Ser Glu Ile Thr Ala Ala Glu Gln Gln Glu Ser Gly Glu Arg
370 375 380

Ala Leu Gly Gly Pro Pro Arg Arg
385 390

<210> 1213

<211> .1005

<212> DNA

<213> Neisseria meningitidis

<400> 1213

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cagggttaaaa agggcgattt gattgcgga atcaattcga cctcgagac caatacgctc 120
aatacggaaa aatccaagtt ggaaacgtat caggcgaagc tgggtgtcggc acagattgca 180
ttgggcagcg cggagaagaa atataagcgt caggcggcgt tatggaagga aaacgcgact 240
tccaaagagg atttggaag cgcgaggat gcgtttgccg ccgccaaagc caatgttgcc 300
gagctgaagg cttaatacag acagagcaaa atttccatca ataccgccga gtcggaattg 360
ggctacacgc gcattaccgc aacgatggac ggcacggttg tggcgattct cgtggaagag 420
gggcagactg tgaacgcggc gcagtctacg ccgacgattg tccaattggc gaatctggat 480
atgatgttga acaaaatgca gattgccgag ggcgatatta ccaaggtgaa ggcggggcag 540
gatatttcgt ttacgatttt gtccgaaccg gatacgccga ttaaggcgaa gctcgacagc 600
gtcgaccccg ggctgaccac gatgtcgtcg ggcggttaca acagcagtac ggatacggct 660
tccaatgcgg tctactatta tgcccgttcg tttgtgccga atccggacgg caaactcgcc 720
acgggggatga cgacgcagaa tacggttgaa atcgacggcg tgaaaaatgt gctgattatt 780
ccgtcgtgta ccgtgaaaaa tcgcggcggc aaggcgtttg tgcgcgtgtt ggggtcggac 840
ggcaaggcgg cggaacgcga aatccggacc ggtatgagag acagtatgaa taccgaagta 900
aaaagcgggt tgaaagaggg ggacaaagtg gtcattctccg aaataaccgc cgccgagcaa 960
caggaaagcg gcgaacgcgc ctaggcggc ccgcgcgcc gataa 1005
```

<210> 1214

<211> 334

<212> PRT

<213> Neisseria meningitidis

<400> 1214

Val Ser Val Gly Ala Gln Ala Ser Gly Gln Ile Lys Ile Leu Tyr Val
1 5 10 15

Lys Leu Gly Gln Gln Val Lys Lys Gly Asp Leu Ile Ala Glu Ile Asn
20 25 30

Ser Thr Ser Gln Thr Asn Thr Leu Asn Thr Glu Lys Ser Lys Leu Glu
35 40 45

Thr Tyr Gln Ala Lys Leu Val Ser Ala Gln Ile Ala Leu Gly Ser Ala
50 55 60

Glu	Lys	Lys	Tyr	Lys	Arg	Gln	Ala	Ala	Leu	Trp	Lys	Glu	Asn	Ala	Thr	65	70	75	80
Ser	Lys	Glu	Asp	Leu	Glu	Ser	Ala	Gln	Asp	Ala	Phe	Ala	Ala	Ala	Lys	85	90	95	
Ala	Asn	Val	Ala	Glu	Leu	Lys	Ala	Leu	Ile	Arg	Gln	Ser	Lys	Ile	Ser	100	105	110	
Ile	Asn	Thr	Ala	Glu	Ser	Glu	Leu	Gly	Tyr	Thr	Arg	Ile	Thr	Ala	Thr	115	120	125	
Met	Asp	Gly	Thr	Val	Val	Ala	Ile	Leu	Val	Glu	Glu	Gly	Gln	Thr	Val	130	135	140	
Asn	Ala	Ala	Gln	Ser	Thr	Pro	Thr	Ile	Val	Gln	Leu	Ala	Asn	Leu	Asp	145	150	155	160
Met	Met	Leu	Asn	Lys	Met	Gln	Ile	Ala	Glu	Gly	Asp	Ile	Thr	Lys	Val	165	170	175	
Lys	Ala	Gly	Gln	Asp	Ile	Ser	Phe	Thr	Ile	Leu	Ser	Glu	Pro	Asp	Thr	180	185	190	
Pro	Ile	Lys	Ala	Lys	Leu	Asp	Ser	Val	Asp	Pro	Gly	Leu	Thr	Thr	Met	195	200	205	
Ser	Ser	Gly	Gly	Tyr	Asn	Ser	Ser	Thr	Asp	Thr	Ala	Ser	Asn	Ala	Val	210	215	220	
Tyr	Tyr	Tyr	Ala	Arg	Ser	Phe	Val	Pro	Asn	Pro	Asp	Gly	Lys	Leu	Ala	225	230	235	240
Thr	Gly	Met	Thr	Thr	Gln	Asn	Thr	Val	Glu	Ile	Asp	Gly	Val	Lys	Asn	245	250	255	
Val	Leu	Ile	Ile	Pro	Ser	Leu	Thr	Val	Lys	Asn	Arg	Gly	Gly	Lys	Ala	260	265	270	
Phe	Val	Arg	Val	Leu	Gly	Ala	Asp	Gly	Lys	Ala	Ala	Glu	Arg	Glu	Ile	275	280	285	
Arg	Thr	Gly	Met	Arg	Asp	Ser	Met	Asn	Thr	Glu	Val	Lys	Ser	Gly	Leu	290	295	300	
Lys	Glu	Gly	Asp	Lys	Val	Val	Ile	Ser	Glu	Ile	Thr	Ala	Ala	Glu	Gln	305	310	315	320
Gln	Glu	Ser	Gly	Glu	Arg	Ala	Leu	Gly	Gly	Pro	Pro	Arg	Arg	325	330				

<210> 1215

<211> 1179

<212> DNA

<213> Neisseria meningitidis

<400> 1215

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atggcaaaaa tgatgaaatg ggcggtgtgt gcggcggtcg cggcggcagc ggtttggggc 60
ggatggtctt atctgaagcc cgagccgcag gctgcttata ttacggaaac ggtcaggcgc 120
ggcgacatca gccggacggt ttctgcaaca ggggagattt cggcgtccaa cctggtatcg 180
gtcggcgcg caggcatcgg gcagattaag aaactttatg tcaaactcgg gcaacagggt 240
aaaaaggcg atttgattgc ggaaatcaat tcgacctcgc agaccaatac gctcaatacg 300
gaaaaatcca aattggaaac gtatcaggcg aagctggtgt cggcacagat tgcattgggc 360
agcgcggaga agaaatataa gcgtcaggcg gcgttgtgga aggatgatgc gaccgctaaa 420
gaagatttgg aaagcgcaca ggatgcgctt gccgccgcca aagccaatgt tgccgagctg 480
aaggctctaa tcagacagag caaaatttcc atcaataccg ccgagtcgga attgggctac 540
acgcgcatta ccgcaacgat ggacggcacg gtggtggcga ttctcgtgga agaggggcag 600
actgtgaacg cggcgagtc tacgccgacg attgtccaat tggcgaatct ggatatgatg 660
ttgaacaaaa tgcagattgc cgaggcgat attaccaagg tgaaggcggg gcaggatatt 720
tcgtttacga tttgtccga accggatacg ccgattaagg cgaagctcga cagcgctcgc 780
cccgggctga ccacgatgtc gtcggggcgc tacaacagca gtacggatac ggcttccaat 840
gcggtctact attatgccg ttcgtttgtg ccgaatccgg acggcaaact cgccacgggg 900
atgacgacgc agaatacgtg tgaaatcgac ggtgtgaaaa atgtgctgat tattccgtcg 960
ctgaccgtga aaaatcgcg cggcaggcgc tttgtgcgcg tgttgggtgc agacggcaag 1020
gcggcggaac gcgaaatccg gaccggatat agagacagta tgaataccga agtaaaaagc 1080
gggttgaaag agggggacaa agtggtcac tccgaaataa ccgccgccga gcagcaggaa 1140
agcggcgaac gcgccctagg cggcccgccg cgccgataa 1179
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<210> 1216

<211> 392

<212> PRT

<213> *Neisseria meningitidis*

<400> 1216

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Met Ala Lys Met Met Lys Trp Ala Ala Val Ala Ala Val Ala Ala Ala
  1              5              10              15

Ala Val Trp Gly Gly Trp Ser Tyr Leu Lys Pro Glu Pro Gln Ala Ala
      20              25              30

Tyr Ile Thr Glu Thr Val Arg Arg Gly Asp Ile Ser Arg Thr Val Ser
      35              40              45

Ala Thr Gly Glu Ile Ser Pro Ser Asn Leu Val Ser Val Gly Ala Gln
      50              55              60

Ala Ser Gly Gln Ile Lys Lys Leu Tyr Val Lys Leu Gly Gln Gln Val
      65              70              75              80

Lys Lys Gly Asp Leu Ile Ala Glu Ile Asn Ser Thr Ser Gln Thr Asn
      85              90              95

Thr Leu Asn Thr Glu Lys Ser Lys Leu Glu Thr Tyr Gln Ala Lys Leu
      100             105             110

Val Ser Ala Gln Ile Ala Leu Gly Ser Ala Glu Lys Lys Tyr Lys Arg
      115             120             125

Gln Ala Ala Leu Trp Lys Asp Asp Ala Thr Ala Lys Glu Asp Leu Glu
      130             135             140

Ser Ala Gln Asp Ala Leu Ala Ala Ala Lys Ala Asn Val Ala Glu Leu
```

145		150		155		160
Lys Ala Leu Ile	Arg Gln Ser Lys Ile	Ser Ile Asn Thr Ala Glu Ser				
	165	170			175	
Glu Leu Gly Tyr Thr Arg Ile Thr Ala Thr Met Asp Gly Thr Val Val						
	180	185			190	
Ala Ile Leu Val Glu Glu Gly Gln Thr Val Asn Ala Ala Gln Ser Thr						
	195	200			205	
Pro Thr Ile Val Gln Leu Ala Asn Leu Asp Met Met Leu Asn Lys Met						
	210	215			220	
Gln Ile Ala Glu Gly Asp Ile Thr Lys Val Lys Ala Gly Gln Asp Ile						
	225	230			235	240
Ser Phe Thr Ile Leu Ser Glu Pro Asp Thr Pro Ile Lys Ala Lys Leu						
	245	250			255	
Asp Ser Val Asp Pro Gly Leu Thr Thr Met Ser Ser Gly Gly Tyr Asn						
	260	265			270	
Ser Ser Thr Asp Thr Ala Ser Asn Ala Val Tyr Tyr Tyr Ala Arg Ser						
	275	280			285	
Phe Val Pro Asn Pro Asp Gly Lys Leu Ala Thr Gly Met Thr Thr Gln						
	290	295			300	
Asn Thr Val Glu Ile Asp Gly Val Lys Asn Val Leu Ile Ile Pro Ser						
	305	310			315	320
Leu Thr Val Lys Asn Arg Gly Gly Arg Ala Phe Val Arg Val Leu Gly						
	325	330			335	
Ala Asp Gly Lys Ala Ala Glu Arg Glu Ile Arg Thr Gly Met Arg Asp						
	340	345			350	
Ser Met Asn Thr Glu Val Lys Ser Gly Leu Lys Glu Gly Asp Lys Val						
	355	360			365	
Val Ile Ser Glu Ile Thr Ala Ala Glu Gln Gln Glu Ser Gly Glu Arg						
	370	375			380	
Ala Leu Gly Gly Pro Pro Arg Arg						
	385	390				

<210> 1217

<211> 798

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1217

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atgaaaacca agttaatcaa aatcttgacc ccctttaccg tcctgccgct gctggcttgc 60
gggcaaacgc ccgtttccaa tgccaacgcc gaatccgccg tcaaagccga atccgccggc 120
aaatccgttg ccgcttcttt gaaagcgcgt ttggaaaaaa cctattccgc ccaagatttg 180

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aaagtgttga gcgtcagcga aacaccggtc aaaggcattt acgaagtcgt cgtcagcggc 240
aggcagatta tctacaccga tgccgaaggc ggctatatgt tcgtcggcga actcatcaac 300
atcgacacgc gcaaaaacct gaccgaagaa cgcgccgccg atttgaacaa aatcgacttc 360
gcctccctgc ctttggacaa agccatcaaa gaagtacgcg gcaacggcaa gctgaaagtc 420
gccgtcttct ccgaccccgga ttgtccgttc tgcaaacgct tggaacatga gtttgaaaaa 480
atgaccgacg tgacggttta cagctttatg atgcccattg ccggcctgca cccagatgcc 540
gcgcgcaagg cgcaaattctt atggtgtcag cccgaccgtg ccaaagcgtg gacggattgg 600
atgcgtaaaag gcaaattccc ggtcggcggc agcatctgcg acaatcccgt cgcggaacc 660
acttccttgg gcgaacagtt cggttcaac ggcacgccga cccttcgtct tccccaacgg 720
gcgcacccaa agcggttaca gcccgatgcc ccaactggag gaaatcatcc gcaaaaacca 780
gcagtaaacc cgcaatga 798

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<210> 1218

<211> 265

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1218

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Met Lys Thr Lys Leu Ile Lys Ile Leu Thr Pro Phe Thr Val Leu Pro
  1             5             10             15

Leu Leu Ala Cys Gly Gln Thr Pro Val Ser Asn Ala Asn Ala Glu Ser
      20             25             30

Ala Val Lys Ala Glu Ser Ala Gly Lys Ser Val Ala Ala Ser Leu Lys
      35             40             45

Ala Arg Leu Glu Lys Thr Tyr Ser Ala Gln Asp Leu Lys Val Leu Ser
      50             55             60

Val Ser Glu Thr Pro Val Lys Gly Ile Tyr Glu Val Val Val Ser Gly
      65             70             75             80

Arg Gln Ile Ile Tyr Thr Asp Ala Glu Gly Gly Tyr Met Phe Val Gly
      85             90             95

Glu Leu Ile Asn Ile Asp Thr Arg Lys Asn Leu Thr Glu Glu Arg Ala
      100            105            110

Ala Asp Leu Asn Lys Ile Asp Phe Ala Ser Leu Pro Leu Asp Lys Ala
      115            120            125

Ile Lys Glu Val Arg Gly Asn Gly Lys Leu Lys Val Ala Val Phe Ser
      130            135            140

Asp Pro Asp Cys Pro Phe Cys Lys Arg Leu Glu His Glu Phe Glu Lys
      145            150            155            160

Met Thr Asp Val Thr Val Tyr Ser Phe Met Met Pro Ile Ala Gly Leu
      165            170            175

His Pro Asp Ala Ala Arg Lys Ala Gln Ile Leu Trp Cys Gln Pro Asp
      180            185            190

Arg Ala Lys Ala Trp Thr Asp Trp Met Arg Lys Gly Lys Phe Pro Val
      195            200            205

```

Gly Gly Ser Ile Cys Asp Asn Pro Val Ala Glu Thr Thr Ser Leu Gly
 210 215 220
 Glu Gln Phe Gly Phe Asn Gly Thr Pro Thr Leu Arg Leu Pro Gln Arg
 225 230 235 240
 Ala His Pro Lys Arg Leu Gln Pro Asp Ala Pro Thr Gly Gly Asn His
 245 250 255
 Pro Gln Lys Pro Ala Val Asn Pro Gln
 260 265

<210> 1219
 <211> 783
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 1219
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 gggcaaacgc ccgtttccaa tgccaacgcc gaacccgccg tcaaagccga gtccgccggc 120
 aaatccgttg ccgcctcttt gaaagcgcgt ttggaaaaaa cctattccgc ccaagatttg 180
 aaagtgtga gcgtcagcga aacaccgggc aaaggcattt acgaagtcgt cgtcagcggc 240
 aggagatta tctacaccga tgccgaaggc ggctatatgt tcgtcggcga actcatcaac 300
 atcgacacgc gcaaaaacct gaccgaagaa cgcgccgccg atttgaacaa aatcgacttc 360
 gcctccctgc ctttgacaaa agccatcaaa gaagtgcgcg gcaacggcaa gctgaaagtc 420
 gccgtcttct ccgaccccga ttgtccgttc tgcaaacgct tggaacacga gtttgaaaaa 480
 atgaccgacg tgacggttta cagctttatg atgccattg ccggcctgca ccccgatgcc 540
 gcgcgcaagg cgcaaatctt atggtgtcag ccgaccgcg ccaaagcgtg gacggattgg 600
 atgcgtaaag gcaaatccccc ggctggcggc agcatctgcg acaatcccgt cgcggaacc 660
 acttccttgg gcgaacaatt cggcttcaac ggacgcgcga cctcgtctt ccccaacggg 720
 cgcagccaaa gcggctacag cccgatgcc caactggagg aaatcatccg caaaaatcaa 780
 taa 783

<210> 1220
 <211> 260
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 1220
 Met Lys Thr Lys Leu Ile Lys Ile Leu Thr Pro Phe Thr Val Leu Pro
 1 5 10 15
 Leu Leu Ala Cys Gly Gln Thr Pro Val Ser Asn Ala Asn Ala Glu Pro
 20 25 30
 Ala Val Lys Ala Glu Ser Ala Gly Lys Ser Val Ala Ala Ser Leu Lys
 35 40 45
 Ala Arg Leu Glu Lys Thr Tyr Ser Ala Gln Asp Leu Lys Val Leu Ser
 50 55 60
 Val Ser Glu Thr Pro Val Lys Gly Ile Tyr Glu Val Val Val Ser Gly
 65 70 75 80

Arg Gln Ile Ile Tyr Thr Asp Ala Glu Gly Gly Tyr Met Phe Val Gly
 85 90 95
 Glu Leu Ile Asn Ile Asp Thr Arg Lys Asn Leu Thr Glu Glu Arg Ala
 100 105 110
 Ala Asp Leu Asn Lys Ile Asp Phe Ala Ser Leu Pro Leu Asp Lys Ala
 115 120 125
 Ile Lys Glu Val Arg Gly Asn Gly Lys Leu Lys Val Ala Val Phe Ser
 130 135 140
 Asp Pro Asp Cys Pro Phe Cys Lys Arg Leu Glu His Glu Phe Glu Lys
 145 150 155 160
 Met Thr Asp Val Thr Val Tyr Ser Phe Met Met Pro Ile Ala Gly Leu
 165 170 175
 His Pro Asp Ala Ala Arg Lys Ala Gln Ile Leu Trp Cys Gln Pro Asp
 180 185 190
 Arg Ala Lys Ala Trp Thr Asp Trp Met Arg Lys Gly Lys Phe Pro Val
 195 200 205
 Gly Gly Ser Ile Cys Asp Asn Pro Val Ala Glu Thr Thr Ser Leu Gly
 210 215 220
 Glu Gln Phe Gly Phe Asn Gly Thr Pro Thr Leu Val Phe Pro Asn Gly
 225 230 235 240
 Arg Ser Gln Ser Gly Tyr Ser Pro Met Pro Gln Leu Glu Glu Ile Ile
 245 250 255
 Arg Lys Asn Gln
 260

<210> 1221
 <211> 783
 <212> DNA
 <213> Neisseria meningitidis

<400> 1221
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 gggcaaacgc cgttttccaa tgccaacgcc gaacccgccg tcaaagccga gtccgccggc 120
 aaatcgtttg cgcctctttt gaaagcgcgt ttggaaaaaa cctattccgc ccaagatttg 180
 aaagtgttga gcgtcagcga aacaccgggc aaaggcattt acgaagtcgt cgtcagcggc 240
 aggcagatta totacaccga tgccgaaggc ggctatatgt tcgtcggcga actcatcaac 300
 atcgacacgc gcaaaaacct gaccgaagaa cgcgcgcccg atttgaacaa aatcgacttc 360
 gcctccctgc ctttggaaca agccatcaaa gaagtgcgcg gcaacggcaa gctgaaagtc 420
 gccgtcttct ccgaccccca ttgtccgttc tgcaaacgct tggaacacga gtttgaaaaa 480
 atgaccgacg tgacggttta cagctttatg atgcccattg ccggcctgca cccgatgcc 540
 gcgcgcaagg cgcaaatctt atggtgtcag cccgaccgcg ccaaagcgtg gacggattgg 600
 atgcgtaaag gcaaatcccc ggtcggcggc agcatctgcg acaatcccgt cgcggaaacc 660
 acttccttgg gcgaacaatt cggcttcaac ggcacgccga ccctcgtctt cccaacggg 720
 cgcagccaaa gcggctacag cccgatgccc caactggagg aaatcatccg caaaaatcaa 780
 taa 783

<210> 1222
<211> 260
<212> PRT
<213> Neisseria meningitidis

<400> 1222
Met Lys Thr Lys Leu Ile Lys Ile Leu Thr Pro Phe Thr Val Leu Pro
1 5 10 15
Leu Leu Ala Cys Gly Gln Thr Pro Val Ser Asn Ala Asn Ala Glu Pro
20 25 30
Ala Val Lys Ala Glu Ser Ala Gly Lys Ser Val Ala Ala Ser Leu Lys
35 40 45
Ala Arg Leu Glu Lys Thr Tyr Ser Ala Gln Asp Leu Lys Val Leu Ser
50 55 60
Val Ser Glu Thr Pro Val Lys Gly Ile Tyr Glu Val Val Val Ser Gly
65 70 75 80
Arg Gln Ile Ile Tyr Thr Asp Ala Glu Gly Gly Tyr Met Phe Val Gly
85 90 95
Glu Leu Ile Asn Ile Asp Thr Arg Lys Asn Leu Thr Glu Glu Arg Ala
100 105 110
Ala Asp Leu Asn Lys Ile Asp Phe Ala Ser Leu Pro Leu Asp Lys Ala
115 120 125
Ile Lys Glu Val Arg Gly Asn Gly Lys Leu Lys Val Ala Val Phe Ser
130 135 140
Asp Pro Asp Cys Pro Phe Cys Lys Arg Leu Glu His Glu Phe Glu Lys
145 150 155 160
Met Thr Asp Val Thr Val Tyr Ser Phe Met Met Pro Ile Ala Gly Leu
165 170 175
His Pro Asp Ala Ala Arg Lys Ala Gln Ile Leu Trp Cys Gln Pro Asp
180 185 190
Arg Ala Lys Ala Trp Thr Asp Trp Met Arg Lys Gly Lys Phe Pro Val
195 200 205
Gly Gly Ser Ile Cys Asp Asn Pro Val Ala Glu Thr Thr Ser Leu Gly
210 215 220
Glu Gln Phe Gly Phe Asn Gly Thr Pro Thr Leu Val Phe Pro Asn Gly
225 230 235 240
Arg Ser Gln Ser Gly Tyr Ser Pro Met Pro Gln Leu Glu Glu Ile Ile
245 250 255
Arg Lys Asn Gln

<210> 1223
 <211> 619
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 1223
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 gtcagaacat catcgaaccg ctttcctgcg gcgttacgac gatattcggc ttttcgacct 120
 acaatttttc cgaagcctgc cggcacgcct tggcatcggg tgcggcgggt caagtcgaat 180
 cggcgggacgc gtggcgtgaa gccgttgaaa aaaccttatac tggcgagggg ggcggaatgc 240
 agatgcaggc gcgcgtggac ggctttatcg cacaacatcg cggagcgggc gcgagaatcg 300
 ccgaggcggg ggttggaagc gtatgcggac atcggggggc atagtatac aatccgtatc 360
 cgagttttcc gggtggagca tcgtatgagt atttatgccg tcgcgcacat catccacctg 420
 tattgcgcca ccgcctttgt cggcggcgtg ttttttgaag tgctggtttt gtccgtcctg 480
 catacgggac ggggtgtcgcg cgaggcgcgg cgcgaagtgg aaaaggcaat gtcttaccgc 540
 gccgtcaggg tgatgccgtt tgcggtcgga ctgctgttcg ccagggggaac tctagagtcg 600
 actgcagcag catgcctc 619

<210> 1224
 <211> 206
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 1224
 Met Arg Ile Thr Cys Ala Pro Met Ser Leu Leu Ser Ala Ala Val Trp
 1 5 10 15
 Ser Val Arg Ala Val Arg Thr Ser Ser Asn Arg Phe Pro Ala Ala Leu
 20 25 30
 Arg Arg Tyr Ser Ala Phe Arg Pro Thr Ile Phe Pro Lys Pro Ala Gly
 35 40 45
 Thr Pro Trp His Arg Val Arg Arg Phe Lys Ser Asn Arg Arg Thr Arg
 50 55 60
 Gly Val Lys Pro Leu Lys Lys Pro Tyr Leu Ala Arg Gly Ala Glu Cys
 65 70 75 80
 Arg Cys Arg Arg Ala Trp Thr Ala Leu Ser His Asn Ile Ala Glu Arg
 85 90 95
 Ala Arg Glu Ser Pro Arg Arg Cys Gly Lys Arg Tyr Ala Asp Ile Gly
 100 105 110
 Gly Asp Ser Asp Thr Ile Arg Ile Arg Val Phe Arg Leu Glu His Arg
 115 120 125
 Met Ser Ile Tyr Ala Val Ala His Ile Ile His Leu Tyr Cys Ala Thr
 130 135 140
 Ala Phe Val Gly Gly Val Phe Phe Glu Val Leu Val Leu Ser Val Leu
 145 150 155 160

His Thr Gly Arg Val Ser Arg Glu Ala Arg Arg Glu Val Glu Lys Ala
165 170 175

Met Ser Tyr Arg Ala Val Arg Val Met Pro Phe Ala Val Gly Leu Leu
180 185 190

Phe Ala Arg Gly Thr Leu Glu Ser Thr Ala Ala Ala Cys Pro
195 200 205

<210> 1225

<211> 834

<212> DNA

<213> Neisseria meningitidis

<400> 1225

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acaatttttc cgaagcctgc cgacacgcct tggcatcggg tgcggcgggt caagtcgaat 180
cggcgggatgc gtggcgggaa gccgttgaaa aaaccttata gtccgagggg ggggggatgc 240
agatgcaggc gcgcgtggac ggctttatcg cacaacatcg cggagcgggc gcgagaatcg 300
ccgaggcggg gcgggaagcg gtatgcggat atcgggggcg atagtatac aatccgtatc 360
cgagttttcc gtttgagca tcgtatgagt atttatgccg tcgcgcacat cgttcatctg 420
tattgcgcta ttgcctttgt cggcggcggt ttttttgaag tgctggtttt gtccgtcctg 480
catacgggac ggggtgtcgc cgaggcgcgg cgcgaagtgg aaaaggcaat gtcttaccgc 540
gccgtcaggg tgatgccggt tgtggtcgga ctgctgttcg ccagcggcat cgtgatggcg 600
gcaaaccgct atctttctat attgggcgaa ccgtttgcca cttccttcgg tacgatgctg 660
acgctgaaaa tcctgttggc gttcagcgta ttggcgcaact tcgccatcgc cgtcgtcaaa 720
atggcgcggt ccacactgac ggtcggttgg tcgaaataca tacacgcggt cgtctttacc 780
catatgctgc tgattgtctt tttggcaaaa gcgatgttt atatcagctg gtaa 834

```

<210> 1226

<211> 277

<212> PRT

<213> Neisseria meningitidis

<400> 1226

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Met Arg Ile Thr Cys Ala Pro Met Ser Leu Leu Ser Ala Ala Val Trp
1 5 10 15

Ser Ile Arg Val Val Arg Thr Ser Ser Asn Arg Phe Pro Ala Ala Phe
20 25 30

Arg Arg Tyr Ser Ala Phe Gln Pro Thr Ile Phe Pro Lys Pro Ala Asp
35 40 45

Thr Pro Trp His Arg Val Arg Arg Phe Lys Ser Asn Arg Arg Met Arg
50 55 60

Gly Gly Lys Pro Leu Lys Lys Pro Tyr Arg Pro Arg Gly Gly Gly Cys
65 70 75 80

Arg Cys Arg Arg Ala Trp Thr Ala Leu Ser His Asn Ile Ala Glu Arg
85 90 95

```

Ala	Arg	Glu	Ser	Pro	Arg	Arg	Cys	Gly	Lys	Arg	Tyr	Ala	Asp	Ile	Gly
			100					105					110		
Gly	Asp	Ser	Asp	Thr	Ile	Arg	Ile	Arg	Val	Phe	Arg	Leu	Glu	His	Arg
		115					120					125			
Met	Ser	Ile	Tyr	Ala	Val	Ala	His	Ile	Val	His	Leu	Tyr	Cys	Ala	Ile
		130					135				140				
Ala	Phe	Val	Gly	Gly	Val	Phe	Phe	Glu	Val	Leu	Val	Leu	Ser	Val	Leu
145					150					155					160
His	Thr	Gly	Arg	Val	Ser	Arg	Glu	Ala	Arg	Arg	Glu	Val	Glu	Lys	Ala
				165					170					175	
Met	Ser	Tyr	Arg	Ala	Val	Arg	Val	Met	Pro	Phe	Val	Val	Gly	Leu	Leu
			180					185					190		
Phe	Ala	Ser	Gly	Ile	Val	Met	Ala	Ala	Asn	Arg	Tyr	Leu	Ser	Ile	Leu
		195					200					205			
Gly	Glu	Pro	Phe	Ala	Thr	Ser	Phe	Gly	Thr	Met	Leu	Thr	Leu	Lys	Ile
		210					215				220				
Leu	Leu	Ala	Phe	Ser	Val	Leu	Ala	His	Phe	Ala	Ile	Ala	Val	Val	Lys
225					230					235					240
Met	Ala	Arg	Ser	Thr	Leu	Thr	Val	Gly	Trp	Ser	Lys	Tyr	Ile	His	Ala
				245					250					255	
Val	Val	Phe	Thr	His	Met	Leu	Leu	Ile	Val	Phe	Leu	Ala	Lys	Ala	Met
			260					265					270		
Phe	Tyr	Ile	Ser	Trp											

275

<210> 1227

<211> 834

<212> DNA

<213> Neisseria meningitidis

<400> 1227

atgcgtatta	cctgtgcgcc	gatgtcgctt	ttgtcggcgg	cagtctggtc	gattcgggct	60
gtcagaacat	catcgaaccg	ctttcctgcg	gcgttccgac	gatattcggc	ttttcgacct	120
acaatttttc	cgaagcctgc	cggcacgcct	tggcatcggg	tgcggcgggt	caagtcgaat	180
cggcggacgc	gtggcgggaa	gccgttgaaa	aaaacttatc	gtccgaggag	ggcggaatgc	240
agatgcaggc	gcgcgcggac	ggctttatcg	cacaacatcg	cggagcgggc	gcgagaatcg	300
ccgaggcggt	acgggaagcg	gtatgcggac	atcggggacg	atagtgatac	aatccgtatc	360
cgagttttcc	ggttggagta	ccgtatgagt	atztatgccg	tcgcgcacat	cgtccacctg	420
tattgcgcca	tcgcctttgt	cggcggcggt	ttttttgaag	tgctggtttt	gtccgtcctg	480
catacgggac	gggtgtcgtg	cgaggcgcgg	cgcgaagtgg	aaaaggcaat	gtcttaccgc	540
gccgtcaggg	tgatgccgtt	tgtggtcgga	ctgctgttcg	ccagcggcat	cgtgatggcg	600
gcaaaccgct	atctttctat	attgggcgaa	cgttttgcca	cttccttcgg	tacgatgctg	660
acgctgaaaa	tcctgtttgc	gttcagcgtg	ttggcgcact	tcgccatcgc	cgtcgtcaaa	720
atggcgcggt	ccacactgac	cgtcggctgg	tcgaaataca	tacacaccgt	cgtctttacc	780

catatgctgc tgattgtctt tttggcaaaa gcgatgtttt atatcagctg gtaa

834

<210> 1228

<211> 277

<212> PRT

<213> *Neisseria meningitidis*

<400> 1228

Met	Arg	Ile	Thr	Cys	Ala	Pro	Met	Ser	Leu	Leu	Ser	Ala	Ala	Val	Trp
1				5					10					15	
Ser	Ile	Arg	Ala	Val	Arg	Thr	Ser	Ser	Asn	Arg	Phe	Pro	Ala	Ala	Phe
			20					25					30		
Arg	Arg	Tyr	Ser	Ala	Phe	Arg	Pro	Thr	Ile	Phe	Pro	Lys	Pro	Ala	Gly
		35					40					45			
Thr	Pro	Trp	His	Arg	Val	Arg	Arg	Phe	Lys	Ser	Asn	Arg	Arg	Thr	Arg
	50					55					60				
Gly	Gly	Lys	Pro	Leu	Lys	Lys	Thr	Tyr	Arg	Pro	Arg	Arg	Ala	Glu	Cys
65					70				75						80
Arg	Cys	Arg	Arg	Ala	Arg	Thr	Ala	Leu	Ser	His	Asn	Ile	Ala	Glu	Arg
				85					90					95	
Ala	Arg	Glu	Ser	Pro	Arg	Arg	Tyr	Gly	Lys	Arg	Tyr	Ala	Asp	Ile	Gly
			100					105					110		
Asp	Asp	Ser	Asp	Thr	Ile	Arg	Ile	Arg	Val	Phe	Arg	Leu	Glu	Tyr	Arg
		115					120					125			
Met	Ser	Ile	Tyr	Ala	Val	Ala	His	Ile	Val	His	Leu	Tyr	Cys	Ala	Ile
	130					135					140				
Ala	Phe	Val	Gly	Gly	Val	Phe	Phe	Glu	Val	Leu	Val	Leu	Ser	Val	Leu
145					150					155					160
His	Thr	Gly	Arg	Val	Ser	Cys	Glu	Ala	Arg	Arg	Glu	Val	Glu	Lys	Ala
				165					170					175	
Met	Ser	Tyr	Arg	Ala	Val	Arg	Val	Met	Pro	Phe	Val	Val	Gly	Leu	Leu
			180					185					190		
Phe	Ala	Ser	Gly	Ile	Val	Met	Ala	Ala	Asn	Arg	Tyr	Leu	Ser	Ile	Leu
		195				200						205			
Gly	Glu	Pro	Phe	Ala	Thr	Ser	Phe	Gly	Thr	Met	Leu	Thr	Leu	Lys	Ile
	210					215					220				
Leu	Leu	Ala	Phe	Ser	Val	Leu	Ala	His	Phe	Ala	Ile	Ala	Val	Val	Lys
225					230				235						240
Met	Ala	Arg	Ser	Thr	Leu	Thr	Val	Gly	Trp	Ser	Lys	Tyr	Ile	His	Thr
				245					250					255	

Val Val Phe Thr His Met Leu Leu Ile Val Phe Leu Ala Lys Ala Met
 260 265 270

Phe Tyr Ile Ser Trp
 275

<210> 1229

<211> 885

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1229

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atgctcggga tggcgcggca cgacggccag cagggcatcg ccgcgatatt gttgccacgc 60
cgccagcagt ttttcgcct cgtcttcgcc ccgataaacg cgcgtgctgc cgcacacggc 120
aaccggccgg cctccgatgc gtttttcaaa ctgccccgcc agcgttttca tgtcttcaga 180
cggcacaggg tcgtatttgg tattgccgca cacctgcacg gatgccgcgc ccaatttcgc 240
caaccgcgcc gcatccgcct ccgtctgcgc cagacagccc gtcagcgaag cggctgcggg 300
acggatcagg cggcggactt tcagataacc gttcagcgat ttttccgaca gccgcgcatt 360
cgccaaaaac agcggcacac ccgctcgccg gcatttcctt atcagattgg gccagatttc 420
ggtttccatc aaaatgccga acatcgggcg gtgttcgcgc aaaaactgcc gtacccacgt 480
ttttttgtca tacggaagat agcggcattg cgcatcggga aacagaactt gcgcgggtttc 540
ccgtcccgtc ggggtcatct gcgtcatcag cagcggcgca tcgggaaaac gccgccgcaa 600
ctcgcgtatc aagggctggg cggcacgcgt ttctccgacc gaaacggcgt gtatccaaac 660

cgccgccgta acgggattcg gatgcggctt gccgaaacgc tcgtccctat gcgcgccgta 720
tgccggggca cttccggagc gtttgtccaa ataacgccgt atccatatcg gcgcaagcag 780
ccacaataca tcataaagcc attggaacat ctttctatct cctgcaaaaac aaatgccgtc 840
cgaacggttc ggacggcatt tcggcaacgg aatcaaatat cgtag 885

```

<210> 1230

<211> 294

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1230

```

Met Leu Gly Met Ala Arg His Asp Gly Gln Gln Gly Ile Ala Ala Ile
  1             5             10             15

Leu Leu Pro Arg Arg Gln Gln Phe Phe Arg Leu Val Phe Ala Pro Ile
      20             25             30

Asn Ala Arg Ala Ala Ala His Gly Asn Arg Pro Ala Ser Asp Ala Phe
      35             40             45

Phe Lys Leu Pro Arg Gln Arg Phe His Val Phe Arg Arg His Gln Val
      50             55             60

Val Phe Gly Ile Ala Ala His Leu His Gly Cys Arg Ala Gln Phe Arg
      65             70             75             80

Gln Pro Arg Arg Ile Arg Leu Arg Leu Arg Gln Thr Ala Arg Gln Arg
      85             90             95

Ser Gly Cys Gly Thr Asp Gln Ala Ala Asp Phe Gln Ile Thr Val Gln
      100            105            110

```

Arg Phe Phe Arg Gln Pro Arg Ile Arg Gln Lys Gln Arg His Thr Arg
 115 120 125
 Ser Pro Ala Phe Leu His Gln Ile Gly Pro Asp Phe Gly Phe His Gln
 130 135 140
 Asn Ala Glu His Arg Ala Val Phe Ala Gln Lys Leu Pro Tyr Pro Arg
 145 150 155 160
 Phe Phe Val Ile Arg Lys Ile Ala Ala Leu Arg Ile Gly Lys Gln Asn
 165 170 175
 Leu Arg Gly Phe Pro Ser Arg Arg Gly His Leu Arg His Gln Gln Arg
 180 185 190
 Arg Ile Gly Lys Thr Pro Pro Gln Leu Ala Tyr Gln Gly Leu Gly Gly
 195 200 205
 Thr Arg Phe Ser Asp Arg Asn Gly Val Tyr Pro Asn Arg Ala Gly Asn
 210 215 220
 Gly Ile Arg Met Arg Leu Ala Glu Thr Leu Val Pro Met Arg Pro Val
 225 230 235 240
 Cys Arg Gly Thr Ser Gly Ala Phe Val Gln Ile Thr Pro Tyr Pro Tyr
 245 250 255
 Arg Arg Lys Gln Pro Gln Tyr Ile Ile Lys Pro Leu Glu His Leu Ser
 260 265 270
 Ile Ser Cys Lys Thr Asn Ala Val Arg Thr Val Arg Thr Ala Phe Arg
 275 280 285
 Gln Arg Asn Gln Ile Ser
 290

<210> 1231

<211> 885

<212> DNA

<213> Neisseria meningitidis

<400> 1231

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 cgccagcagt ttttccgcct cgtcttcacc ccgataaacg cgcgtgctgc cgcacacggc 120
 aaccggccgg cctccgatgc gtttttcaaa ctgcccgcgc agcgttttca tctgttccga 180
 cggatatgatg tcgtatattg tattgccgca cactgcacgc gatgccgcgc ccaatttcgc 240
 caaccgcgcc gcatccgcct ctgtctgcgc cagacacccc gtcagcgaag cggcggcagg 300
 acggatcagg cggcggactt tcagataacc gttcaacgat ttttccgaca gccgcgcatt 360
 cgccaaaaac agcggcacac ccgcgcgcgc gcattccctc atcagggttg gccagatttc 420
 ggtttccatc aaaatgccga acatcgggcg gtgttcgcgc aaaaactgcc gtaccacagt 480
 tttttgtca tacggaagat agcggcattg cgcacgggga aacagaactt gcgcggtttc 540
 ccgccccgtc ggggtcatct gcgtcatcag cagcggcgca tcgggaaaac gccgccgcaa 600
 ctgcggtatc aaggactggg cggcacgcgt ttctccgacc gaaacggcgt gtatccaaac 660
 cgcgccggtc acgggattcg gatacggctt gccgaaacgc tcgtcccgat gcgcccgata 720
 tgccggggca cttccggagc gtttgcctca ataacgccgt atccatatac gcgcaagcag 780

ccacaataca tcataaagcc attggaacat ctttctatatt cctgcaaaac aaatgccgtc 840
tgaacgggttc agacggcatt tcggcaacgg aatcaaatat cgtag 885

<210> 1232

<211> 294

<212> PRT

<213> Neisseria meningitidis

<400> 1232

Met	Leu	Gly	Met	Ala	Arg	His	Asp	Asp	Gln	Gln	Arg	Ile	Ala	Ala	Ile	1	5	10	15
Leu	Leu	Pro	Arg	Arg	Gln	Gln	Phe	Phe	Arg	Leu	Val	Phe	Thr	Pro	Ile	20	25	30	
Asn	Ala	Arg	Ala	Ala	Ala	His	Gly	Asn	Arg	Pro	Ala	Ser	Asp	Ala	Phe	35	40	45	
Phe	Lys	Leu	Pro	Arg	Gln	Arg	Phe	His	Leu	Phe	Arg	Arg	Tyr	Asp	Val	50	55	60	
Val	Phe	Gly	Ile	Ala	Ala	His	Leu	His	Gly	Cys	Arg	Ala	Gln	Phe	Arg	65	70	75	80
Gln	Pro	Arg	Arg	Ile	Arg	Leu	Cys	Leu	Arg	Gln	Thr	Pro	Arg	Gln	Arg	85	90	95	
Ser	Gly	Gly	Arg	Thr	Asp	Gln	Ala	Ala	Asp	Phe	Gln	Ile	Thr	Val	Gln	100	105	110	
Arg	Phe	Phe	Arg	Gln	Pro	Arg	Ile	Arg	Gln	Lys	Gln	Arg	His	Thr	Arg	115	120	125	
Ala	Pro	Ala	Phe	Pro	His	Gln	Val	Gly	Pro	Asp	Phe	Gly	Phe	His	Gln	130	135	140	
Asn	Ala	Glu	His	Arg	Ala	Val	Phe	Ala	Gln	Lys	Leu	Pro	Tyr	Pro	Arg	145	150	155	160
Phe	Phe	Val	Ile	Arg	Lys	Ile	Ala	Ala	Leu	Arg	Ile	Gly	Lys	Gln	Asn	165	170	175	
Leu	Arg	Gly	Phe	Pro	Pro	Arg	Arg	Gly	His	Leu	Arg	His	Gln	Gln	Arg	180	185	190	
Arg	Ile	Gly	Lys	Thr	Pro	Pro	Gln	Leu	Ala	Tyr	Gln	Gly	Leu	Gly	Gly	195	200	205	
Thr	Arg	Phe	Ser	Asp	Arg	Asn	Gly	Val	Tyr	Pro	Asn	Arg	Ala	Gly	Asn	210	215	220	
Gly	Ile	Arg	Ile	Arg	Leu	Ala	Glu	Thr	Leu	Val	Pro	Met	Arg	Pro	Ile	225	230	235	240
Cys	Arg	Gly	Thr	Ser	Gly	Ala	Phe	Val	Gln	Ile	Thr	Pro	Tyr	Pro	Tyr	245	250	255	

Arg Arg Lys Gln Pro Gln Tyr Ile Ile Lys Pro Leu Glu His Leu Ser
260 265 270

Ile Ser Cys Lys Thr Asn Ala Val Xaa Thr Val Gln Thr Ala Phe Arg
275 280 285

Gln Arg Asn Gln Ile Ser
290

<210> 1233

<211> 885

<212> DNA

<213> Neisseria meningitidis

<400> 1233

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cgccagcagt ttttccgcct cgtcttcacc ccgataaacg cgcgtgctgc cgcacacggc 120
aacctgccgg tctccgatgc gtttttcaaa ctgccccgcc agcgttttca tctgttccga 180
cggcatcagg tcgtatttgg tattgccgca cacctgcacg gatgccgcgc ccaatttcgc 240
caaccgcgcc gcatccgcct ccgtctgtgc cagacagccc gtcagcgaag cggcggcagg 300
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cgccaaaaac agcggcacac ccgtgcgccg gcattccttc atcagattgg gccagatttc 420
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ttttttgtca tacggaagat agcggcattg tgcatacaga aacagaactt gcgcggtttc 540
ccgtcccgtc ggggtcatct gcgtcatcag cagcggcgca tcgggaaaac gctgccgcaa 600
ctcgcgtatc aaaggttggg cggcacgcgt ttccccgacc gaaacggcgt gtatccaaac 660
cgcgccggta acgggattcg gatacggctt gccgaaacgc tcgccccgat gcgcccgata 720
tgacggggca cttccggagc gtttgtccaa ataacgccgt atccatatcg gcgcaagcag 780
ccacaatata tcataaagcc attggaacat ctttctatit cctgcaaaac aaatgccgtc 840
cgaacggttc ggacggcatt tcggcaacgg aatcaaatat cgtag 885
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<210> 1234

<211> 293

<212> PRT

<213> Neisseria meningitidis

<400> 1234

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Met Leu Gly Met Ala Arg His Asp Asp Gln Gln Gly Ile Ala Ala Ile
  1             5             10             15

Leu Leu Pro Arg Arg Gln Gln Phe Phe Arg Leu Val Phe Thr Pro Ile
  20             25             30

Asn Ala Arg Ala Ala Ala His Gly Asn Leu Pro Val Ser Asp Ala Phe
  35             40             45

Phe Lys Leu Pro Arg Gln Arg Phe His Leu Phe Arg Arg His Gln Val
  50             55             60

Val Phe Gly Ile Ala Ala His Leu His Gly Cys Arg Ala Gln Phe Arg
  65             70             75             80

Gln Pro Arg Arg Ile Arg Leu Arg Leu Cys Gln Thr Ala Arg Gln Arg
  85             90             95
```

Ser Gly Gly Arg Thr Asp Gln Ala Ala Asp Phe Gln Ile Thr Val Arg
 100 105 110
 Phe Phe Arg Gln Pro Arg Ile Arg Gln Lys Gln Arg His Thr Arg Ala
 115 120 125
 Pro Ala Phe Leu His Gln Ile Gly Pro Asp Phe Gly Phe His Gln Asn
 130 135 140
 Ala Glu His Arg Ala Val Phe Ala Gln Lys Leu Pro Tyr Pro Arg Phe
 145 150 155 160
 Phe Val Ile Arg Lys Ile Ala Ala Leu Cys Ile Arg Lys Gln Asn Leu
 165 170 175
 Arg Gly Phe Pro Ser Arg Arg Gly His Leu Arg His Gln Gln Arg Arg
 180 185 190
 Ile Gly Lys Thr Leu Pro Gln Leu Ala Tyr Gln Arg Leu Gly Gly Thr
 195 200 205
 Arg Phe Pro Asp Arg Asn Gly Val Tyr Pro Asn Arg Ala Gly Asn Gly
 210 215 220
 Ile Arg Ile Arg Leu Ala Glu Thr Leu Ala Pro Met Arg Pro Ile Cys
 225 230 235 240
 Arg Gly Thr Ser Gly Ala Phe Val Gln Ile Thr Pro Tyr Pro Tyr Arg
 245 250 255
 Arg Lys Gln Pro Gln Tyr Ile Ile Lys Pro Leu Glu His Leu Ser Ile
 260 265 270
 Ser Cys Lys Thr Asn Ala Val Arg Thr Val Arg Thr Ala Phe Arg Gln
 275 280 285
 Arg Asn Gln Ile Ser
 290

<210> 1235

<211> 1293

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1235

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 ccgcagcgcg tggaacaaaa actgccgccg ctgtcttggg gcggcaacgg cggttcagacg 180
 gcatattggg tgcaggaggc ggtgcagccg ggggactcgc tggcggacgt gctggcgcggt 240
 tcgggtatgg cgcgggacga gattgcccga atcacggaaa aatatggcgg cgaagccgat 300
 ttgcggcatt tgcgtgccga ccagtcggtt catgttttgg tcggcgccga cggcagtgcg 360
 cgcgaaagtgc agttttttac cgacgaagac ggcgagcgca atctggtcgc tttggaaaaa 420
 aaaggcggca tatggcggcg gtcggcttct gatgcggata tgaaggtttt gccgacactg 480
 cgttcgggtcg tgggtcaaac gtcggcgcgcg gggttcgctgg cgcgggcgga agtgcgccgtc 540
 gaaatccgcg aatccttaag cgggattttt gccggccgct tcagccttga cggtttgaag 600

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gaaggcgatg ccgtgcgcct gctttacgac agcctgtatt tccacgggca gcaggtggcg 660
gcgggcgata ttttggcggc ggaagttgtc aaggcgggca caacccatca ggcgttctat 720
taccgttcgg acaaggaagg cggagggggc ggcaattatt acgatgaaga cggcaggggtg 780
ttgcaggaaa aaggcggtt caacatcgag ccgctgggtc atacgcgcac ttcttcgccg 840
ttcggctacc gtatgcaccc catcctgcac acatggcggc tgcacacggg catcgattat 900
gccgcaccgc agggaacgcc ggtcagggct tccgccgacg gcgtgattac ctttaaaggc 960
cggaagggcg gatacggcaa cgcggtgatg atacgccacg ccaacggtgt ggaaacgctg 1020
tacgcgcact tgagcgcgtt ttgcaggca caaggcaatg tgcgcgggcg cgaggtcatc 1080
ggttttgtcg gttcgacagg gcgttcgacc gggccgcacc tgcattacga ggcgcgcac 1140
aacgggcagc ccgtcaatcc tgtttcggtc gcattgccga caccgaatt gacgcaggcg 1200
gacaaggcgg cgtttgccgc gcagaaacag aaggcggacg cgctgcttgc gcgcttgccg 1260
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<210> 1236

<211> 380

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1236

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Leu Ser Trp Gly Gly Asn Gly Val Gln Thr Ala Tyr Trp Val Gln Glu
  1             5             10             15

```

```

Ala Val Gln Pro Gly Asp Ser Leu Ala Asp Val Leu Ala Arg Ser Gly
      20             25             30

```

```

Met Ala Arg Asp Glu Ile Ala Arg Ile Thr Glu Lys Tyr Gly Gly Glu
      35             40             45

```

```

Ala Asp Leu Arg His Leu Arg Ala Asp Gln Ser Val His Val Leu Val
      50             55             60

```

```

Gly Gly Asp Gly Ser Ala Arg Glu Val Gln Phe Phe Thr Asp Glu Asp
      65             70             75             80

```

```

Gly Glu Arg Asn Leu Val Ala Leu Glu Lys Lys Gly Gly Ile Trp Arg
      85             90             95

```

```

Arg Ser Ala Ser Asp Ala Asp Met Lys Val Leu Pro Thr Leu Arg Ser
     100             105             110

```

```

Val Val Val Lys Thr Ser Ala Arg Gly Ser Leu Ala Arg Ala Glu Val
     115             120             125

```

```

Pro Val Glu Ile Arg Glu Ser Leu Ser Gly Ile Phe Ala Gly Arg Phe
     130             135             140

```

```

Ser Leu Asp Gly Leu Lys Glu Gly Asp Ala Val Arg Leu Leu Tyr Asp
     145             150             155             160

```

```

Ser Leu Tyr Phe His Gly Gln Gln Val Ala Ala Gly Asp Ile Leu Ala
     165             170             175

```

```

Ala Glu Val Val Lys Gly Gly Thr Thr His Gln Ala Phe Tyr Tyr Arg
     180             185             190

```

```

Ser Asp Lys Glu Gly Gly Gly Gly Asn Tyr Tyr Asp Glu Asp Gly

```

195	200	205
Arg Val Leu Gln Glu Lys Gly Gly Phe Asn Ile Glu Pro Leu Val Tyr		
210	215	220
Thr Arg Ile Ser Ser Pro Phe Gly Tyr Arg Met His Pro Ile Leu His		
225	230	235 240
Thr Trp Arg Leu His Thr Gly Ile Asp Tyr Ala Ala Pro Gln Gly Thr		
245	250	255
Pro Val Arg Ala Ser Ala Asp Gly Val Ile Thr Phe Lys Gly Arg Lys		
260	265	270
Gly Gly Tyr Gly Asn Ala Val Met Ile Arg His Ala Asn Gly Val Glu		
275	280	285
Thr Leu Tyr Ala His Leu Ser Ala Phe Ser Gln Ala Gln Gly Asn Val		
290	295	300
Arg Gly Gly Glu Val Ile Gly Phe Val Gly Ser Thr Gly Arg Ser Thr		
305	310	315 320
Gly Pro His Leu His Tyr Glu Ala Arg Ile Asn Gly Gln Pro Val Asn		
325	330	335
Pro Val Ser Val Ala Leu Pro Thr Pro Glu Leu Thr Gln Ala Asp Lys		
340	345	350
Ala Ala Phe Ala Ala Gln Lys Gln Lys Ala Asp Ala Leu Leu Ala Arg		
355	360	365
Leu Arg Gly Ile Pro Val Thr Val Ser Gln Ser Asp		
370	375	380

<210> 1237

<211> 1293

<212> DNA

<213> Neisseria meningitidis

<400> 1237

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ccgcagcgcg tggaacaaaa tctgccgccg ctgtcttggg gcggcagcgg cgttcagacg 180
gcatattggg tgcaggaggc ggtgcagccg ggcgactcgc tggcggacgt gctggcgcg 240
tcgggtatgg cgcgggacga gattgcccga atcacggaaa aatatggcgg cgaagccgat 300
ttgcggcatt tgcgtgccga ccagtcggtt catgttttgg tcggcggcga cggcggcgcg 360
cgcgaagtgc agttttttac cgacgaagac ggcgagcgca atctggtcgc tttggaaaag 420
aaaggcgcca tatggcggcg gtcggcttct gaggcgata tgaaggtttt gccgacgctg 480
cgttcggtcg tggcctaaac gtcggcgcg cgttcgctgg cgcgggcgga agtgcccgct 540
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gaaggcgatg ccgtgcgcct gatgtacgac agcctgtatt tccacgggca gcaggtggcg 660
gcgggcgata ttttgccggc tgaagtcggt aaggcgga caaggcatca ggcgttctat 720
taccgttcgg acaaggaagg cggagggggc ggcaattatt atgatgaaga cggcaaggtg 780
ttgcaggaaa aaggcggctt caacatcgag ccgtggtct atacgcgcat ttcttcgccg 840
ttcggctacc gtatgcaccc catcctgcac acatggcggc tgcacacggg catcgattat 900

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gccgcaccgc agggaacgcc ggtcagggct tccgccgacg gcgtgattac ctttaaaggc 960
cggaagggcg gatacggcaa cgcggtgatg atacgccacg ccaacggtgt ggaaacgctg 1020
tacgcgcact tgagcgcgtt ttcgcaggcg gaaggcaatg tgcgcggcgg cgagggtcatc 1080
ggttttgtcg gttcgaccgg gcgttcgacc gggccgcacc tgcattacga ggcgcgcac 1140
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gacaaggcgg cgtttgccgc gcagaaacag aaggcggacg cgctgcttgc gcgcttgccg 1260
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<210> 1238
 <211> 430
 <212> PRT
 <213> Neisseria meningitidis

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<400> 1238
Met Ala Val Phe Pro Leu Ser Ala Lys His Arg Lys Tyr Ala Leu Arg
  1           5           10           15

Ala Leu Ala Val Ser Ile Ile Leu Val Ser Ala Ala Tyr Ile Ala Ser
      20           25           30

Thr Glu Arg Thr Glu Arg Val Arg Pro Gln Arg Val Glu Gln Asn Leu
  35           40           45

Pro Pro Leu Ser Trp Gly Gly Ser Gly Val Gln Thr Ala Tyr Trp Val
  50           55           60

Gln Glu Ala Val Gln Pro Gly Asp Ser Leu Ala Asp Val Leu Ala Arg
  65           70           75           80

Ser Gly Met Ala Arg Asp Glu Ile Ala Arg Ile Thr Glu Lys Tyr Gly
      85           90           95

Gly Glu Ala Asp Leu Arg His Leu Arg Ala Asp Gln Ser Val His Val
  100           105           110

Leu Val Gly Gly Asp Gly Gly Ala Arg Glu Val Gln Phe Phe Thr Asp
  115           120           125

Glu Asp Gly Glu Arg Asn Leu Val Ala Leu Glu Lys Lys Gly Gly Ile
  130           135           140

Trp Arg Arg Ser Ala Ser Glu Ala Asp Met Lys Val Leu Pro Thr Leu
  145           150           155           160

Arg Ser Val Val Val Lys Thr Ser Ala Arg Gly Ser Leu Ala Arg Ala
      165           170           175

Glu Val Pro Val Glu Ile Arg Glu Ser Leu Ser Gly Ile Phe Ala Gly
      180           185           190

Arg Phe Ser Leu Asp Gly Leu Lys Glu Gly Asp Ala Val Arg Leu Met
  195           200           205

Tyr Asp Ser Leu Tyr Phe His Gly Gln Gln Val Ala Ala Gly Asp Ile
  210           215           220

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Leu Ala Ala Glu Val Val Lys Gly Gly Thr Arg His Gln Ala Phe Tyr
 225 230 235 240
 Tyr Arg Ser Asp Lys Glu Gly Gly Gly Gly Asn Tyr Tyr Asp Glu
 245 250 255
 Asp Gly Lys Val Leu Gln Glu Lys Gly Gly Phe Asn Ile Glu Pro Leu
 260 265 270
 Val Tyr Thr Arg Ile Ser Ser Pro Phe Gly Tyr Arg Met His Pro Ile
 275 280 285
 Leu His Thr Trp Arg Leu His Thr Gly Ile Asp Tyr Ala Ala Pro Gln
 290 295 300
 Gly Thr Pro Val Arg Ala Ser Ala Asp Gly Val Ile Thr Phe Lys Gly
 305 310 315 320
 Arg Lys Gly Gly Tyr Gly Asn Ala Val Met Ile Arg His Ala Asn Gly
 325 330 335
 Val Glu Thr Leu Tyr Ala His Leu Ser Ala Phe Ser Gln Ala Glu Gly
 340 345 350
 Asn Val Arg Gly Gly Glu Val Ile Gly Phe Val Gly Ser Thr Gly Arg
 355 360 365
 Ser Thr Gly Pro His Leu His Tyr Glu Ala Arg Ile Asn Gly Gln Pro
 370 375 380
 Val Asn Pro Val Ser Val Ala Leu Pro Thr Pro Glu Leu Thr Gln Ala
 385 390 395 400
 Asp Lys Ala Ala Phe Ala Ala Gln Lys Gln Lys Ala Asp Ala Leu Leu
 405 410 415
 Ala Arg Leu Arg Gly Ile Pro Val Thr Val Ser Gln Ser Asp
 420 425 430

<210> 1239

<211> 1293

<212> DNA

<213> Neisseria meningitidis

<400> 1239

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 tcgattattt tgggtgctggc ggcatacatt gcttcgacag agaggacgga gcgcgtcaga 120
 ccgcagcgcg tggaacaaaa actgccgccg ctgtcttggg gcggcagcgg tgttcagacg 180
 gcatattggg tgcaggaggc ggtgcagcca ggcgactcgc tggcggacgt gctggcgcgt 240
 tcgggtatgg cgcgggacga aattgccga ataacggaaa aatatggcgg cgaagccgat 300
 ttgcggcatt tgcgtgccga ccagtcggtt catgttttgg tcggcggcga cggcggcgcg 360
 cgcgaaagtgc agttttttac cgacgaagac ggcgagcgca atctggtcgc tttggaaaaa 420
 aaaggcggca tatggcggcg gtcggcttct gaggcggata tgaaggtttt gccgacgctg 480
 cgttcggtcg tgggtcaaaac gtcggcgcgc ggttcgctgg cgcgggcgga agtgcccgtc 540
 gaaattcgcg aatccttaag cgggattttc gccggccgct tcagccttga tggtttgaag 600

gaaggcgatg ccgtgcgctt gatttacgac agcctgtatt tccacgggca gcaggtggcg 660
gcgggcgata ttctggcggc ggaagtcgtt aagggcggca caaggcatca ggcgttctat 720
taccgttcgg acaaggaagg aggagggggc ggcaattatt acgatgaaga cggcaggggtg 780
ttgcaggaaa aaggcggctt caacatcgag ccaactggtct atacgcgcat ttcttcgccg 840
ttcggtacc gtatgcaccc catcctgcac acttggcggc tgcacacggg catcgattat 900
gccgcaccgc agggaacgcc ggtcagggct tccgccgacg gcgtgattac ctttaaaggc 960
cggaaggggtg gctacggcaa cgcggtgatg atacgccacg ccaacggtgt ggaaacgctg 1020

tatgcgcact tgagcgcgtt ttctcaggca gaaggcaatg tgcgcggcgg cgaggtcatc 1080
ggttttgtcg gttcgaccgg gcgttcgacg gggccgcacc tgcattacga ggcgcgcac 1140
aatgggcagc ccgtcaatcc tgtttcggtc gcattgccga caccgaatt gacgcaggcg 1200
gacaaggcgg cgtttgccgc gcagaaacag aaggcggacg cgctgcttgc gcgcttgccg 1260
ggcataccgg ttaccgtgtc gcaatcggat tga 1293

<210> 1240

<211> 430

<212> PRT

<213> Neisseria meningitidis

<400> 1240

Met Ala Val Phe Pro Leu Ser Ala Lys His Arg Lys Tyr Ala Leu Arg
1 5 10 15

Ala Leu Ala Val Ser Ile Ile Leu Val Ser Ala Ala Tyr Ile Ala Ser
20 25 30

Thr Glu Arg Thr Glu Arg Val Arg Pro Gln Arg Val Glu Gln Lys Leu
35 40 45

Pro Pro Leu Ser Trp Gly Gly Ser Gly Val Gln Thr Ala Tyr Trp Val
50 55 60

Gln Glu Ala Val Gln Pro Gly Asp Ser Leu Ala Asp Val Leu Ala Arg
65 70 75 80

Ser Gly Met Ala Arg Asp Glu Ile Ala Arg Ile Thr Glu Lys Tyr Gly
85 90 95

Gly Glu Ala Asp Leu Arg His Leu Arg Ala Asp Gln Ser Val His Val
100 105 110

Leu Val Gly Gly Asp Gly Gly Ala Arg Glu Val Gln Phe Phe Thr Asp
115 120 125

Glu Asp Gly Glu Arg Asn Leu Val Ala Leu Glu Lys Lys Gly Gly Ile
130 135 140

Trp Arg Arg Ser Ala Ser Glu Ala Asp Met Lys Val Leu Pro Thr Leu
145 150 155 160

Arg Ser Val Val Val Lys Thr Ser Ala Arg Gly Ser Leu Ala Arg Ala
165 170 175

Glu Val Pro Val Glu Ile Arg Glu Ser Leu Ser Gly Ile Phe Ala Gly
180 185 190

Arg Phe Ser Leu Asp Gly Leu Lys Glu Gly Asp Ala Val Arg Leu Ile
 195 200 205
 Tyr Asp Ser Leu Tyr Phe His Gly Gln Gln Val Ala Ala Gly Asp Ile
 210 215 220
 Leu Ala Ala Glu Val Val Lys Gly Gly Thr Arg His Gln Ala Phe Tyr
 225 230 235 240
 Tyr Arg Ser Asp Lys Glu Gly Gly Gly Gly Gly Asn Tyr Tyr Asp Glu
 245 250 255
 Asp Gly Arg Val Leu Gln Glu Lys Gly Gly Phe Asn Ile Glu Pro Leu
 260 265 270
 Val Tyr Thr Arg Ile Ser Ser Pro Phe Gly Tyr Arg Met His Pro Ile
 275 280 285
 Leu His Thr Trp Arg Leu His Thr Gly Ile Asp Tyr Ala Ala Pro Gln
 290 295 300
 Gly Thr Pro Val Arg Ala Ser Ala Asp Gly Val Ile Thr Phe Lys Gly
 305 310 315 320
 Arg Lys Gly Gly Tyr Gly Asn Ala Val Met Ile Arg His Ala Asn Gly
 325 330 335
 Val Glu Thr Leu Tyr Ala His Leu Ser Ala Phe Ser Gln Ala Glu Gly
 340 345 350
 Asn Val Arg Gly Gly Glu Val Ile Gly Phe Val Gly Ser Thr Gly Arg
 355 360 365
 Ser Thr Gly Pro His Leu His Tyr Glu Ala Arg Ile Asn Gly Gln Pro
 370 375 380
 Val Asn Pro Val Ser Val Ala Leu Pro Thr Pro Glu Leu Thr Gln Ala
 385 390 395 400
 Asp Lys Ala Ala Phe Ala Ala Gln Lys Gln Lys Ala Asp Ala Leu Leu
 405 410 415
 Ala Arg Leu Arg Gly Ile Pro Val Thr Val Ser Gln Ser Asp
 420 425 430

<210> 1241

<211> 984

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1241

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 gaaccgcttg ccgcctacgg atggtggcgg agcggagcgg cgttgcaaga aaacgcctac 180
 gccctttcag acggcatcaa aaccttcttg tccggcgaaa cgccccccac ggctcaagac 240
 ggcgggttcgg cagatatgcc gcctgaagcc gccgcacccg aagccgcccc gccggccggc 300


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ggaacagaat ggaaacaagg caccgaagcc gccgccgtcc gcagcggcga caaagtcttt 360
ttcgccggag attcgctgat gcagggcggtt gcgcctttcg tgcaaaaaag cctgaaacag 420
caatacggca tcgaatccgc caacctcagc aaacaaagca cggggctttc ctatccctca 480
ttcttcgact ggccgaaaac gattgaagaa accttgaaaa aacatcccga aatcagcgta 540
ctcgccgtct tcctcgcccc gaacgacccg tgggatttcc ccgtcggcaa acgctacctc 600
aaattcgctt ccgacgaatg ggcgcaagaa tacctgaaac gcgtcgaccg catccttgaa 660
gccgcacaca cgcaccgcgt ccaagtcgtc tggctcggca tcccctacat gaaaaaagtc 720
aagctcgacg gtcagatgcg ctacctcgac aaactgcttt cggaacactt gaaaggcaaa 780
atcatcctga ttcccaccgc gcaaacactg agcggcggga aaggccgcta caccgattcc 840
gtcaacgtca acggcaaac ccgtccgtac cgcagtaagg acggcataca ctttaccgcc 900
gaaggacaaa aactgctggc ggaaaaaata atggaaaaaa tcgtttttga accgagtacg 960
caaccatcaa gtacacagcc atga 984

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<210> 1242

<211> 327

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1242

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Met Lys Asn Phe Leu Ser Leu Phe Ala Ser Ile Leu Met Ser Ala Leu
  1                      5                      10                      15

Ile Ala Val Trp Phe Ser Gln Asn Pro Ile Asn Ala Tyr Trp Gln Gln
                20                      25                      30

Thr Tyr His Arg Asn Ser Pro Leu Glu Pro Leu Ala Ala Tyr Gly Trp
                35                      40                      45

Trp Arg Ser Gly Ala Ala Leu Gln Glu Asn Ala Tyr Ala Leu Ser Asp
                50                      55                      60

Gly Ile Lys Thr Phe Leu Ser Gly Glu Thr Pro Pro Thr Ala Gln Asp
                65                      70                      75                      80

Gly Gly Ser Ala Asp Met Pro Pro Glu Ala Ala Ala Ser Glu Ala Ala
                85                      90                      95

Pro Pro Ala Gly Gly Thr Glu Trp Lys Gln Gly Thr Glu Ala Ala Ala
                100                     105                     110

Val Arg Ser Gly Asp Lys Val Phe Phe Ala Gly Asp Ser Leu Met Gln
                115                     120                     125

Gly Val Ala Pro Phe Val Gln Lys Ser Leu Lys Gln Gln Tyr Gly Ile
                130                     135                     140

Glu Ser Ala Asn Leu Ser Lys Gln Ser Thr Gly Leu Ser Tyr Pro Ser
                145                     150                     155                     160

Phe Phe Asp Trp Pro Lys Thr Ile Glu Glu Thr Leu Lys Lys His Pro
                165                     170                     175

Glu Ile Ser Val Leu Ala Val Phe Leu Gly Pro Asn Asp Pro Trp Asp
                180                     185                     190

Phe Pro Val Gly Lys Arg Tyr Leu Lys Phe Ala Ser Asp Glu Trp Ala

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195	200	205
Gln Glu Tyr Leu Lys Arg Val Asp Arg Ile Leu Glu Ala Ala His Thr 210	215	220
His Arg Val Gln Val Val Trp Leu Gly Ile Pro Tyr Met Lys Lys Val 225	230	235 240
Lys Leu Asp Gly Gln Met Arg Tyr Leu Asp Lys Leu Leu Ser Glu His 245	250	255
Leu Lys Gly Lys Ile Ile Leu Ile Pro Thr Ala Gln Thr Leu Ser Gly 260	265	270
Gly Lys Gly Arg Tyr Thr Asp Ser Val Asn Val Asn Gly Lys Pro Val 275	280	285
Arg Tyr Arg Ser Lys Asp Gly Ile His Phe Thr Ala Glu Gly Gln Lys 290	295	300
Leu Leu Ala Glu Lys Ile Met Glu Lys Ile Val Phe Glu Pro Ser Thr 305	310	315 320
Gln Pro Ser Ser Thr Gln Pro 325		

<210> 1243
 <211> 984
 <212> DNA
 <213> Neisseria meningitidis

<400> 1243
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 ttcagccaaa accccatcaa cgcctactgg cagcagacct accaccgcaa cagcccgctc 120
 gaaccgcttg ccgcctacgg atggtggcgg agcgggtgcgg cgttgcaaga aaacgcctac 180
 gccctttcag acggcatcaa agccttcctg tccggcgaaa cgccgccgac ggctcaagac 240
 ggcggttcgg cagatatgcc gtctgaagcc gccgcatccg aagccgtccc tcaaaccggt 300
 gaaacagaat ggaacaaga caccgaagcc gccgcgctcc gcagcggcga caaagtcttt 360
 tttgtcggcg actcgctgat gcaggcgctt gcccccttcg tgcaaaaaag cctgaaacag 420
 caatacggca tcgaatccgt caacctcagc aaacaaagca cggggctgtc ctaccctca 480
 ttcttcgact ggccgaaaac gattgaagaa accctgcaaa aacatcccga aatcagcgta 540
 ctgcgcgtct tcctcggacc gaacgaccgg tgggatttcc ccgtcggcaa actctatctc 600
 aaattcgctt ccgacgaatg ggcgcaagaa tacctgaaac gtgtcgaccg catccttgaa 660
 gccgcacaca cgcaccgct ccaagtcgtc tggtcggca tccctacat gaaaaagcc 720
 aagctcgacg gacagatgcg ctacctagac aaactgcttt cggaacattht gaaaggcaaa 780
 atcatcctga ttcccaccac gcacaccctg agcggcgagg aagaccgcta caccgactcc 840
 gtcaacgtca acggcaaacc cgtccgctac cgcagcaagg acggcataca ctttaccgcc 900
 gaaggacaaa aactgctggc ggcaaaaata atggaaaaaa tcgtttttga accaagtacg 960
 caaccatcaa gtacacagcc atga 984

<210> 1244
 <211> 327
 <212> PRT
 <213> Neisseria meningitidis

<400> 1244

Met Lys Asn Phe Leu Ser Leu Phe Ser Ser Ile Leu Met Ser Ala Leu
1 5 10 15
Ile Ala Val Trp Phe Ser Gln Asn Pro Ile Asn Ala Tyr Trp Gln Gln
20 25 30
Thr Tyr His Arg Asn Ser Pro Leu Glu Pro Leu Ala Ala Tyr Gly Trp
35 40 45
Trp Arg Ser Gly Ala Ala Leu Gln Glu Asn Ala Tyr Ala Leu Ser Asp
50 55 60
Gly Ile Lys Ala Phe Leu Ser Gly Glu Thr Pro Pro Thr Ala Gln Asp
65 70 75 80
Gly Gly Ser Ala Asp Met Pro Ser Glu Ala Ala Ala Ser Glu Ala Val
85 90 95
Pro Gln Thr Gly Glu Thr Glu Trp Lys Gln Asp Thr Glu Ala Ala Ala
100 105 110
Val Arg Ser Gly Asp Lys Val Phe Phe Val Gly Asp Ser Leu Met Gln
115 120 125
Gly Val Ala Pro Phe Val Gln Lys Ser Leu Lys Gln Gln Tyr Gly Ile
130 135 140
Glu Ser Val Asn Leu Ser Lys Gln Ser Thr Gly Leu Ser Tyr Pro Ser
145 150 155 160
Phe Phe Asp Trp Pro Lys Thr Ile Glu Glu Thr Leu Gln Lys His Pro
165 170 175
Glu Ile Ser Val Leu Ala Val Phe Leu Gly Pro Asn Asp Pro Trp Asp
180 185 190
Phe Pro Val Gly Lys Leu Tyr Leu Lys Phe Ala Ser Asp Glu Trp Ala
195 200 205
Gln Glu Tyr Leu Lys Arg Val Asp Arg Ile Leu Glu Ala Ala His Thr
210 215 220
His Arg Val Gln Val Val Trp Leu Gly Ile Pro Tyr Met Lys Lys Ala
225 230 235 240
Lys Leu Asp Gly Gln Met Arg Tyr Leu Asp Lys Leu Leu Ser Glu His
245 250 255
Leu Lys Gly Lys Ile Ile Leu Ile Pro Thr Thr His Thr Leu Ser Gly
260 265 270
Gly Lys Asp Arg Tyr Thr Asp Ser Val Asn Val Asn Gly Lys Pro Val
275 280 285
Arg Tyr Arg Ser Lys Asp Gly Ile His Phe Thr Ala Glu Gly Gln Lys

290

295

300

Leu Leu Ala Ala Lys Ile Met Glu Lys Ile Val Phe Glu Pro Ser Thr
 305 310 315 320

Gln Pro Ser Ser Thr Gln Pro
 325

<210> 1245

<211> 984

<212> DNA

<213> Neisseria meningitidis

<400> 1245

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 ttcagccaaa accccatcaa cgcctactgg cagcagacct accaccgcaa cagcccgtct 120
 gaaccgcttg ccgcctacgg atggtggcgg agcgggtgcgg cattgcaaga aaacgcctac 180
 gccctttcag acggcatcaa agccttcttg tccggcgaaa cgcgcgcgac ggctcaagac 240
 ggcgggttcgg cagatatgcc gtctgaagcc gccgcaccgg aaaccgcccc tcaaactggc 300
 gaaacagaat ggaaacaaaa caccgaagcc gccgccgtcc gaacagggga caaagtcttt 360
 ttcgccggcg actcgctgat gcagggcggt gcacccttcg tgcaaaaaag cctgaaacag 420
 caatacggca tcgaatccgt caacctcagc aaacaaagca cggggctgtc ctaccctca 480
 ttcttcgact ggccgaaaac gattgaagaa accctgaaaa aacatcccga aatcagcgtg 540
 ctgcgcgtct tctcgggtcc gaacgaccgg tgggatttcc ccgttggcaa acgctacctc 600
 aaattcgctt ccgacgaatg ggcgcaagaa tacctgaaac gcgtcgaccg catccttgaa 660

gccgcacaca cgcactacgt ccaagtcgtc tggctcggca tcccctacat gaaaaaagcc 720
 aagctcgacg gacagatgcg ctacctagac aaactgcttt cggaatattt gaaaggcaaa 780
 atcatcctga ttcccaccgc gcacaccctg agcggcggga aagaccgcta caccgactcc 840
 gtcaacgtca acggcaaaac cgtccgctac cgcagcaagg acggcataca ctttaccgcc 900
 gaaggacaaa aactgctggc ggcaaaaata atggaaaaaa tcgtttttga accaagtacg 960
 caaccatcaa gtacacagcc atga 984

<210> 1246

<211> 327

<212> PRT

<213> Neisseria meningitidis

<400> 1246

Met Lys Asn Phe Leu Ser Leu Phe Ala Ser Ile Leu Met Ser Ala Leu
 1 5 10 15

Ile Ala Val Trp Phe Ser Gln Asn Pro Ile Asn Ala Tyr Trp Gln Gln
 20 25 30

Thr Tyr His Arg Asn Ser Pro Leu Glu Pro Leu Ala Ala Tyr Gly Trp
 35 40 45

Trp Arg Ser Gly Ala Ala Leu Gln Glu Asn Ala Tyr Ala Leu Ser Asp
 50 55 60

Gly Ile Lys Ala Phe Leu Ser Gly Glu Thr Pro Pro Thr Ala Gln Asp
 65 70 75 80

Gly Gly Ser Ala Asp Met Pro Ser Glu Ala Ala Ala Pro Glu Thr Ala
 85 90 95
 Pro Gln Thr Gly Glu Thr Glu Trp Lys Gln Asn Thr Glu Ala Ala Ala
 100 105 110
 Val Arg Thr Gly Asp Lys Val Phe Phe Ala Gly Asp Ser Leu Met Gln
 115 120 125
 Gly Val Ala Pro Phe Val Gln Lys Ser Leu Lys Gln Gln Tyr Gly Ile
 130 135 140
 Glu Ser Val Asn Leu Ser Lys Gln Ser Thr Gly Leu Ser Tyr Pro Ser
 145 150 155 160
 Phe Phe Asp Trp Pro Lys Thr Ile Glu Glu Thr Leu Lys Lys His Pro
 165 170 175
 Glu Ile Ser Val Leu Ala Val Phe Leu Gly Pro Asn Asp Pro Trp Asp
 180 185 190
 Phe Pro Val Gly Lys Arg Tyr Leu Lys Phe Ala Ser Asp Glu Trp Ala
 195 200 205
 Gln Glu Tyr Leu Lys Arg Val Asp Arg Ile Leu Glu Ala Ala His Thr
 210 215 220
 His Tyr Val Gln Val Val Trp Leu Gly Ile Pro Tyr Met Lys Lys Ala
 225 230 235 240
 Lys Leu Asp Gly Gln Met Arg Tyr Leu Asp Lys Leu Leu Ser Glu Tyr
 245 250 255
 Leu Lys Gly Lys Ile Ile Leu Ile Pro Thr Ala His Thr Leu Ser Gly
 260 265 270
 Gly Lys Asp Arg Tyr Thr Asp Ser Val Asn Val Asn Gly Lys Pro Val
 275 280 285
 Arg Tyr Arg Ser Lys Asp Gly Ile His Phe Thr Ala Glu Gly Gln Lys
 290 295 300
 Leu Leu Ala Ala Lys Ile Met Glu Lys Ile Val Phe Glu Pro Ser Thr
 305 310 315 320
 Gln Pro Ser Ser Thr Gln Pro
 325

<210> 1247

<211> 1194

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1247

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 ctgcccgtcg cctccgtcag ccccgacacc gttaccgttt ccccgctccgc cccctacacc 120

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gatacaaacg ggctgctgac cgactacggc aacgccgccg cctcgcttg gatgaaaaaa 180
ctccgatccg tcgcacaagg cagcggcgag gccttccgca tcttgcaaat cggcgactcg 240
cataccgccg gcgacttctt taccgacgcc ctgcgcaaac gcctgcaaaa aacatggggc 300
gacggcgcca taggctgggt ttaccccgcc aacgtcaaag ggcagcgcat ggcggcgcgc 360
cgtcacagcg gcaactggca aagcttcacc agcaggaaca ataccggaga tttcccgctc 420
ggcggcatcc tcgccccaaac cggcagcggc ggcggcatga ccctgaccgc gtctgacggc 480
aaaaccggca aacagcgcgt ttccctgttt gccaaaccgc tgctcgccga acaaaccctg 540
accgtcaacg gcaacaccgt ctccgccaac ggcggcggct ggcaggtact ggatacgggc 600
gcggcactgc ccctggccat acagaccgaa atgccgtggg acatcggtt catcaacatc 660
gaaaatcccg cggcgggcat taccgtttcc gcgatgggca tcaacggcgc acaattgacc 720
cagtggtcga aatggcgtgc cgaccgtatg aacgaccttg cccaaaccgg cgccgatttg 780
gttatccttt cctacggcac caacgaagcc ttcaacaaca acatcgacat tgccgatacc 840
gaacaaaaat ggctggatac cgtccgccaa atccgcgaca gcctgcccgc cgccggcatc 900
ctcatcatcg gcgcgcccga atccctgaaa aacacgctcg gcgtatgcgg cgcgcgcccc 960
gtcctcctga ccgaagtcca acagatgcag cggcgcgtcg cccgtcaggg gcagacgatg 1020
ttttggtctt ggcaaaacgc aatgggcggc atatgcagca tgaaaaactg gctcaaccaa 1080
ggatggggccg ccaaagacgg cgtacacttc tccgcccaag gctaccggcg cgcggcggaa 1140
atgcttgccg acagcctcga agaactcgtc cgcgccgccg caatcaggca ataa 1194

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<210> 1248

<211> 397

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1248

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Met Asn Pro Lys His Phe Ile Ala Phe Ser Ala Leu Phe Ala Ala Thr
  1              5              10              15

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Gln Ala Glu Ala Leu Pro Val Ala Ser Val Ser Pro Asp Thr Val Thr
      20              25              30

```

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Val Ser Pro Ser Ala Pro Tyr Thr Asp Thr Asn Gly Leu Leu Thr Asp
      35              40              45

```

```

Tyr Gly Asn Ala Ala Ala Ser Pro Trp Met Lys Lys Leu Arg Ser Val
      50              55              60

```

```

Ala Gln Gly Ser Gly Glu Ala Phe Arg Ile Leu Gln Ile Gly Asp Ser
      65              70              75              80

```

```

His Thr Ala Gly Asp Phe Phe Thr Asp Ala Leu Arg Lys Arg Leu Gln
      85              90              95

```

```

Lys Thr Trp Gly Asp Gly Gly Ile Gly Trp Val Tyr Pro Ala Asn Val
      100              105              110

```

```

Lys Gly Gln Arg Met Ala Ala Val Arg His Ser Gly Asn Trp Gln Ser
      115              120              125

```

```

Phe Thr Ser Arg Asn Asn Thr Gly Asp Phe Pro Leu Gly Gly Ile Leu
      130              135              140

```

```

Ala Gln Thr Gly Ser Gly Gly Gly Met Thr Leu Thr Ala Ser Asp Gly
      145              150              155              160

```

```

Lys Thr Gly Lys Gln Arg Val Ser Leu Phe Ala Lys Pro Leu Leu Ala

```

165 170 175
 Glu Gln Thr Leu Thr Val Asn Gly Asn Thr Val Ser Ala Asn Gly Gly
 180 185 190
 Gly Trp Gln Val Leu Asp Thr Gly Ala Ala Leu Pro Leu Ala Ile Gln
 195 200 205
 Thr Glu Met Pro Trp Asp Ile Gly Phe Ile Asn Ile Glu Asn Pro Ala
 210 215 220
 Gly Gly Ile Thr Val Ser Ala Met Gly Ile Asn Gly Ala Gln Leu Thr
 225 230 235 240
 Gln Trp Ser Lys Trp Arg Ala Asp Arg Met Asn Asp Leu Ala Gln Thr
 245 250 255
 Gly Ala Asp Leu Val Ile Leu Ser Tyr Gly Thr Asn Glu Ala Phe Asn
 260 265 270
 Asn Asn Ile Asp Ile Ala Asp Thr Glu Gln Lys Trp Leu Asp Thr Val
 275 280 285
 Arg Gln Ile Arg Asp Ser Leu Pro Ala Ala Gly Ile Leu Ile Ile Gly
 290 295 300
 Ala Pro Glu Ser Leu Lys Asn Thr Leu Gly Val Cys Gly Thr Arg Pro
 305 310 315 320
 Val Leu Leu Thr Glu Val Gln Gln Met Gln Arg Arg Val Ala Arg Gln
 325 330 335
 Gly Gln Thr Met Phe Trp Ser Trp Gln Asn Ala Met Gly Gly Ile Cys
 340 345 350
 Ser Met Lys Asn Trp Leu Asn Gln Gly Trp Ala Ala Lys Asp Gly Val
 355 360 365
 His Phe Ser Ala Gln Gly Tyr Arg Arg Ala Ala Glu Met Leu Ala Asp
 370 375 380
 Ser Leu Glu Glu Leu Val Arg Ala Ala Ala Ile Arg Gln
 385 390 395

<210> 1249

<211> 1194

<212> DNA

<213> Neisseria meningitidis

<400> 1249

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 gatacaaacg ggctgctgac cgactacggc aacgcctccg cctcgcttg gatgaaaaaa 180
 ctccaatccg tcgcacaagg cagcggcgag accttccgta tcctgcaa at cggcgactcg 240
 cataccgccg gcgacttctt taccgacagc ctgcgcaa ac gcctgcaaaa aacttggggc 300
 gacggcgcca taggctgggt ttaccccgcc aacgtcaa ag ggcagcgcat ggcggccgtc 360

cggcacaacg gtaactggca aagcctcacc agcaggaaca acaccggaga cttcccgtc 420
 ggcggcatcc tcgccacac cggcagcggc ggcagcatga ccctgaccgc atcggacggc 480
 atagcaagca agcagcgcgt ttccctgttt gccaaacccc tgcttgccga acaaaccctg 540
 accgtcaacg gcaacaccgt ctccgccaac ggcggcggct ggcaggtact ggatacgggc 600
 gcggcactgc ccctgaccat acacaccgaa atgccgtggg acatcggctt catcaacatc 660
 gaaaatcccg ccggcggcat taccgtttcc gcgatgggca tcaacggcgc acaattaacc 720
 cagtggtcga aatggcgtgc cgaccgtatg aacgacctcg cccaaaccgg cgccgatttg 780
 gttatccttt cctacggcac caacgaagct ttcaacaaca acatcgacat tgccgacacc 840
 gaacaaaaat ggctggatac cgtcgcgcaa atccgcgaca gcctgcctgc cgccggcatc 900
 ctcatcatcg gcgcaccgga atccctgaaa aacacgctcg gcgtatgcgg cacacgcccc 960
 gtcgcgctga ccgaagtcca acagatgcag cggcgcgtcg cccgtcaggg gcagacgatg 1020
 ttctggctct ggcaaacgc catgggcggc atatgcagca tgaaaaactg gctcaaccaa 1080
 ggatgggccc ccaaagacgg cgtacacttc tccgccaaag gctaccggcg cgcggcggaa 1140
 atgctcgccg acagcctcga agaactcgtc cgctccgtg caatcaggca ataa 1194

<210> 1250

<211> 397

<212> PRT

<213> Neisseria meningitidis

<400> 1250

Met Asn Pro Lys His Leu Ile Ala Phe Ser Ala Leu Phe Ala Ala Thr
 1 5 10 15

Gln Ala Glu Ala Leu Pro Val Ala Ser Val Ser Leu Asp Thr Val Thr
 20 25 30

Val Ser Pro Ser Ala Pro Tyr Thr Asp Thr Asn Gly Leu Leu Thr Asp
 35 40 45

Tyr Gly Asn Ala Ser Ala Ser Pro Trp Met Lys Lys Leu Gln Ser Val
 50 55 60

Ala Gln Gly Ser Gly Glu Thr Phe Arg Ile Leu Gln Ile Gly Asp Ser
 65 70 75 80

His Thr Ala Gly Asp Phe Phe Thr Asp Ser Leu Arg Lys Arg Leu Gln
 85 90 95

Lys Thr Trp Gly Asp Gly Gly Ile Gly Trp Val Tyr Pro Ala Asn Val
 100 105 110

Lys Gly Gln Arg Met Ala Ala Val Arg His Asn Gly Asn Trp Gln Ser
 115 120 125

Leu Thr Ser Arg Asn Asn Thr Gly Asp Phe Pro Leu Gly Gly Ile Leu
 130 135 140

Ala His Thr Gly Ser Gly Gly Ser Met Thr Leu Thr Ala Ser Asp Gly
 145 150 155 160

Ile Ala Ser Lys Gln Arg Val Ser Leu Phe Ala Lys Pro Leu Leu Ala
 165 170 175

Glu Gln Thr Leu Thr Val Asn Gly Asn Thr Val Ser Ala Asn Gly Gly

180								185				190			
Gly	Trp	Gln	Val	Leu	Asp	Thr	Gly	Ala	Ala	Leu	Pro	Leu	Thr	Ile	His
195							200				205				
Thr	Glu	Met	Pro	Trp	Asp	Ile	Gly	Phe	Ile	Asn	Ile	Glu	Asn	Pro	Ala
210				215				220							
Gly	Gly	Ile	Thr	Val	Ser	Ala	Met	Gly	Ile	Asn	Gly	Ala	Gln	Leu	Thr
225					230			235			240				
Gln	Trp	Ser	Lys	Trp	Arg	Ala	Asp	Arg	Met	Asn	Asp	Leu	Ala	Gln	Thr
				245			250			255					
Gly	Ala	Asp	Leu	Val	Ile	Leu	Ser	Tyr	Gly	Thr	Asn	Glu	Ala	Phe	Asn
				260			265			270					
Asn	Asn	Ile	Asp	Ile	Ala	Asp	Thr	Glu	Gln	Lys	Trp	Leu	Asp	Thr	Val
275				280				285							
Arg	Gln	Ile	Arg	Asp	Ser	Leu	Pro	Ala	Ala	Gly	Ile	Leu	Ile	Ile	Gly
290			295				300								
Ala	Pro	Glu	Ser	Leu	Lys	Asn	Thr	Leu	Gly	Val	Cys	Gly	Thr	Arg	Pro
305		310				315				320					
Val	Arg	Leu	Thr	Glu	Val	Gln	Gln	Met	Gln	Arg	Arg	Val	Ala	Arg	Gln
				325			330			335					
Gly	Gln	Thr	Met	Phe	Trp	Ser	Trp	Gln	Asn	Ala	Met	Gly	Gly	Ile	Cys
340				345				350							
Ser	Met	Lys	Asn	Trp	Leu	Asn	Gln	Gly	Trp	Ala	Ala	Lys	Asp	Gly	Val
355				360				365							
His	Phe	Ser	Ala	Lys	Gly	Tyr	Arg	Arg	Ala	Ala	Glu	Met	Leu	Ala	Asp
370		375				380									
Ser	Leu	Glu	Glu	Leu	Val	Arg	Ser	Ala	Ala	Ile	Arg	Gln			
385		390				395									

<210> 1251

<211> 1194

<212> DNA

<213> Neisseria meningitidis

<400> 1251

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ctacctgtcg cctcagtcag cctcgacacc gttaccggtt ccccgctccg cccctacacc 120
gatacaaacg ggctgctgac cgactacggc aacgcctccg cctcgcttg gatgaaaaaa 180
ctccaatccg tcgcacaagg cagcggcgag accttccgta tcctgcaa at cggcgactcg 240
cataccgccg gcgacttctt taccgacagc ctgcgcaa ac gcctacaaa aacttggggc 300
gacggcgcca taggctgggt ttaccccgcc aacgtcaa ag ggcagcgcat ggcgccgctc 360
cggcacaacg gtaactggca aagcctcacc agcaggaaca acaccggaga cttcccgctc 420
ggcggcacac cggcagcggc ggcagcatga ccctgaccgc atcgacggc 480

```

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atagcaagca agcagcgcgt ttccctgttt gccaaacccc tgcttgccga acaaaccctg 540
accgtcaacg gcaacaccgt ctccgccaac ggcggcggct ggcagggtact ggatacgggc 600
gcggcactgc ccctgaccat acacaccgaa atgccgtggg acatcggctt catcaacatc 660
gaaaatcccg ccggcggcat taccgtttcc gcgatgggca tcaacggcgc acaattaacc 720
cagtgggtcg aatggcgtgc cgaccgtatg aacgaccttg cccaaaccgg cgccgatcta 780
gtcatccttg cctacggtac caacgaagcc ttcggcgaca acatcgacat tgccgatacc 840
gaacagaaat ggctggatac cgtccgccaa atccgcgaca gcctacctgc cgccggcatc 900
ctcatcatcg gcgcgcccga atccctgaaa aacacgctcg gcgtatgcgg cacacgcccc 960
gtccgcctga ccgaagtcca acagatgcag cggcgcatcg cccgtcaggg gcagacgatg 1020
ttctggtctt ggcaaaacgc gatgggcggc gtttgcagca tgaaaaactg gctcaaccac 1080
ggatggggccg ccaaagacgg cgtacacttt tccgccaaag gctaccaacg gtcggcgcaa 1140
atgctcgccg acagcctcga agaactcgtc cgctccgctg caatcaggca ataa 1194

```

<210> 1252

<211> 397

<212> PRT

<213> Neisseria meningitidis

<400> 1252

```

Met Asn Pro Lys His Leu Ile Ala Phe Ser Ala Leu Phe Ala Ala Thr
  1              5              10              15

```

```

Gln Ala Glu Ala Leu Pro Val Ala Ser Val Ser Leu Asp Thr Val Thr
      20              25              30

```

```

Val Ser Pro Ser Ala Pro Tyr Thr Asp Thr Asn Gly Leu Leu Thr Asp
      35              40              45

```

```

Tyr Gly Asn Ala Ser Ala Ser Pro Trp Met Lys Lys Leu Gln Ser Val
      50              55              60

```

```

Ala Gln Gly Ser Gly Glu Thr Phe Arg Ile Leu Gln Ile Gly Asp Ser
      65              70              75              80

```

```

His Thr Ala Gly Asp Phe Phe Thr Asp Ser Leu Arg Lys Arg Leu Gln
      85              90              95

```

```

Lys Thr Trp Gly Asp Gly Gly Ile Gly Trp Val Tyr Pro Ala Asn Val
      100             105             110

```

```

Lys Gly Gln Arg Met Ala Ala Val Arg His Asn Gly Asn Trp Gln Ser
      115             120             125

```

```

Leu Thr Ser Arg Asn Asn Thr Gly Asp Phe Pro Leu Gly Gly Ile Leu
      130             135             140

```

```

Ala His Thr Gly Ser Gly Gly Ser Met Thr Leu Thr Ala Ser Asp Gly
      145             150             155             160

```

```

Ile Ala Ser Lys Gln Arg Val Ser Leu Phe Ala Lys Pro Leu Leu Ala
      165             170             175

```

```

Glu Gln Thr Leu Thr Val Asn Gly Asn Thr Val Ser Ala Asn Gly Gly
      180             185             190

```

Gly Trp Gln Val Leu Asp Thr Gly Ala Ala Leu Pro Leu Thr Ile His
 195 200 205
 Thr Glu Met Pro Trp Asp Ile Gly Phe Ile Asn Ile Glu Asn Pro Ala
 210 215 220
 Gly Gly Ile Thr Val Ser Ala Met Gly Ile Asn Gly Ala Gln Leu Thr
 225 230 235 240
 Gln Trp Ser Lys Trp Arg Ala Asp Arg Met Asn Asp Leu Ala Gln Thr
 245 250 255
 Gly Ala Asp Leu Val Ile Leu Ala Tyr Gly Thr Asn Glu Ala Phe Gly
 260 265 270
 Asp Asn Ile Asp Ile Ala Asp Thr Glu Gln Lys Trp Leu Asp Thr Val
 275 280 285
 Arg Gln Ile Arg Asp Ser Leu Pro Ala Ala Gly Ile Leu Ile Ile Gly
 290 295 300
 Ala Pro Glu Ser Leu Lys Asn Thr Leu Gly Val Cys Gly Thr Arg Pro
 305 310 315 320
 Val Arg Leu Thr Glu Val Gln Gln Met Gln Arg Arg Ile Ala Arg Gln
 325 330 335
 Gly Gln Thr Met Phe Trp Ser Trp Gln Asn Ala Met Gly Gly Val Cys
 340 345 350
 Ser Met Lys Asn Trp Leu Asn His Gly Trp Ala Ala Lys Asp Gly Val
 355 360 365
 His Phe Ser Ala Lys Gly Tyr Gln Arg Ser Ala Glu Met Leu Ala Asp
 370 375 380
 Ser Leu Glu Glu Leu Val Arg Ser Ala Ala Ile Arg Gln
 385 390 395

<210> 1253

<211> 1602

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1253

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 ggacgatttt tacgcacagt cgaatggctg ggcaatatgt tgccgcaccc ggttacgctt 120
 tttattattt tcattgtggt attgctgatt gcctctgccg tcggtgcgta tttcggacta 180
 tccgtcccg atccgcgtec tgttggggcg aaaggacgtg ccgatgacgg tttgattcac 240
 gttgtcagcc tgctcgatgc cgacggttg atcaaaatcc tgacgcatac cgtaaaaaat 300
 ttcaccggtt tcgcgcggtt gggaacggtg ttggtttctt tattgggcgt ggggattgcg 360
 gaaaaatcgg gcttgatttc cgcattaatg cgcttattgc tcacaaaatc cccacgcaaa 420
 ctactactt ttatggttgt ttttacaggg attttatcca atacggcttc tgaattgggc 480
 tatgtcgtcc taatcccttt gtccgcgctc atctttcatt cgctcggccg ccatccgctt 540
 gccggtttg ctgcggcttt cgcggcggtt tcgggcgggt attcggccaa tctgttctta 600
 ggcacaatcg atccgctctt ggcaggcatc acccaacagg cggcgcaa atcatcatccc 660

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gactacgtcg taggccctga agccaactgg ttttttatgg cagccagtac gtttgtgatt 720
gctttgattg gttattttgt tactgaaaaa atcgtcgaac cgcaattggg cccttatcaa 780
tcagatttgt cacaagaaga aaaagacatt cggcattcca atgaaatcac gcctttggaa 840
tataaaggat taatttgggc aggcgtggtg tttgtgcct tatccgccct attggcttgg 900
agcatcgtcc ctgccgacgg tattttgcgt catcctgaaa caggattggt tgccggttcg 960
ccgtttttaa aatcgattgt tgtttttatt ttcttgttgt ttgcgctgcc gggcattggt 1020
tatggccgga taaccggaag tttgcgcggc gaacgggaag tcgttaatgc gatggccgaa 1080
tcgatgagta ctttgggact ttatttggtc atcatctttt ttgccgcaca gtttgtcgca 1140
ttttttaatt ggacgaatat tgggcaatat attgccgta aaggggcggt gttcttaaaa 1200
gaagtcggct tgggcggcag tgtgttgttt atcggtttta ttttaatttg tgcttttatc 1260
aatctgatga taggctccgc ctccgcgcaa tggcggttaa ctgcgccgat tttcgtccct 1320
atgctgatgt tggccggcta cgcgccccaa gtcattcaag ccgcttaccg catcggtgat 1380
tccgttacca atattattac gccgatgatg agttatttcg ggctgattat ggcgacggta 1440
atcaaataca aaaaagatgc gggcgtaggc acgtgattt ctatgatgtt gccgtattcc 1500
gctttcttct taattgcatg gatcgctta ttctgcattt gggattttgt tttgggtctg 1560
cccgtcggtc ccggcacacc cacattctat ccggtgcctt aa 1602

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<210> 1254

<211> 533

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1254

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Met His Ser Ile Tyr Phe Phe Lys Glu Lys Gln Met Ser Gln Thr Asp
  1                      5                      10                      15

Ala Arg Arg Ser Gly Arg Phe Leu Arg Thr Val Glu Trp Leu Gly Asn
      20                      25                      30

Met Leu Pro His Pro Val Thr Leu Phe Ile Ile Phe Ile Val Leu Leu
      35                      40                      45

Leu Ile Ala Ser Ala Val Gly Ala Tyr Phe Gly Leu Ser Val Pro Asp
      50                      55                      60

Pro Arg Pro Val Gly Ala Lys Gly Arg Ala Asp Asp Gly Leu Ile His
      65                      70                      75                      80

Val Val Ser Leu Leu Asp Ala Asp Gly Leu Ile Lys Ile Leu Thr His
      85                      90                      95

Thr Val Lys Asn Phe Thr Gly Phe Ala Pro Leu Gly Thr Val Leu Val
      100                      105                      110

Ser Leu Leu Gly Val Gly Ile Ala Glu Lys Ser Gly Leu Ile Ser Ala
      115                      120                      125

Leu Met Arg Leu Leu Leu Thr Lys Ser Pro Arg Lys Leu Thr Thr Phe
      130                      135                      140

Met Val Val Phe Thr Gly Ile Leu Ser Asn Thr Ala Ser Glu Leu Gly
      145                      150                      155                      160

Tyr Val Val Leu Ile Pro Leu Ser Ala Val Ile Phe His Ser Leu Gly
      165                      170                      175

```

Arg His Pro Leu Ala Gly Leu Ala Ala Ala Phe Ala Gly Val Ser Gly
 180 185 190
 Gly Tyr Ser Ala Asn Leu Phe Leu Gly Thr Ile Asp Pro Leu Leu Ala
 195 200 205
 Gly Ile Thr Gln Gln Ala Ala Gln Ile Ile His Pro Asp Tyr Val Val
 210 215 220
 Gly Pro Glu Ala Asn Trp Phe Phe Met Ala Ala Ser Thr Phe Val Ile
 225 230 235 240
 Ala Leu Ile Gly Tyr Phe Val Thr Glu Lys Ile Val Glu Pro Gln Leu
 245 250 255
 Gly Pro Tyr Gln Ser Asp Leu Ser Gln Glu Glu Lys Asp Ile Arg His
 260 265 270
 Ser Asn Glu Ile Thr Pro Leu Glu Tyr Lys Gly Leu Ile Trp Ala Gly
 275 280 285
 Val Val Phe Val Ala Leu Ser Ala Leu Leu Ala Trp Ser Ile Val Pro
 290 295 300
 Ala Asp Gly Ile Leu Arg His Pro Glu Thr Gly Leu Val Ala Gly Ser
 305 310 315 320
 Pro Phe Leu Lys Ser Ile Val Val Phe Ile Phe Leu Leu Phe Ala Leu
 325 330 335
 Pro Gly Ile Val Tyr Gly Arg Ile Thr Arg Ser Leu Arg Gly Glu Arg
 340 345 350
 Glu Val Val Asn Ala Met Ala Glu Ser Met Ser Thr Leu Gly Leu Tyr
 355 360 365
 Leu Val Ile Ile Phe Phe Ala Ala Gln Phe Val Ala Phe Phe Asn Trp
 370 375 380
 Thr Asn Ile Gly Gln Tyr Ile Ala Val Lys Gly Ala Val Phe Leu Lys
 385 390 395 400
 Glu Val Gly Leu Gly Gly Ser Val Leu Phe Ile Gly Phe Ile Leu Ile
 405 410 415
 Cys Ala Phe Ile Asn Leu Met Ile Gly Ser Ala Ser Ala Gln Trp Ala
 420 425 430
 Val Thr Ala Pro Ile Phe Val Pro Met Leu Met Leu Ala Gly Tyr Ala
 435 440 445
 Pro Gln Val Ile Gln Ala Ala Tyr Arg Ile Gly Asp Ser Val Thr Asn
 450 455 460
 Ile Ile Thr Pro Met Met Ser Tyr Phe Gly Leu Ile Met Ala Thr Val
 465 470 475 480

Ile Lys Tyr Lys Lys Asp Ala Gly Val Gly Thr Leu Ile Ser Met Met
 485 490 495

Leu Pro Tyr Ser Ala Phe Phe Leu Ile Ala Trp Ile Ala Leu Phe Cys
 500 505 510

Ile Trp Val Phe Val Leu Gly Leu Pro Val Gly Pro Gly Thr Pro Thr
 515 520 525

Phe Tyr Pro Val Pro
 530

<210> 1255
 <211> 1581
 <212> DNA
 <213> Neisseria meningitidis

<400> 1255
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 ggacgatttt tacgcacagt cgaatggctg ggcaatatgt tgccgcatcc ggttacgctt 120
 ttattatttt tcattgtgtt attgctgatt gcctctgccg tcggtgcgta tttcggacta 180
 tccgtcccg atccgcgccc tggttggtgcg aaaggacgtg ccgatgacgg tttgatttac 240
 attgtcagcc tgctcaatgc cgacggtttt atcaaaatcc tgacgcatac cgtaaaaaat 300
 ttcaccgggt tcgcgcgctt gggaacgggt ttggtttctt tattgggctt ggggattgct 360
 gaaaaatcgg gcttgatttc cgcattaatg cgcttattgc tcacaaaatc gccacgcaaa 420
 ctactacttt ttatggttgt ttttacaggg attttatcta ataccgcttc tgaattgggc 480
 tatgtcgtcc taatcccttt gtccgccatc atctttcatt ccctcgcccg ccatccgctt 540
 gccggtctgg ctgcggcttt cgccggcggt tcgggcgggt attcggccaa tctgttctta 600
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 gccaaactgt tttttatggt agccagtacg tttgtgattg ctttgattgg ttattttgtt 720
 actgaaaaaa tcgtcgaacc gcaattgggc ccttatcaat cagatttgct acaagaagaa 780
 aaagacattc ggcatcccaa tgaaatcacg cctttggaat ataaaggatt aatttgggct 840
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 gcgcccgaag tcattcaagc cgcttaccgc atcggtgatt ccgttaccaa tattattacg 1380
 ccgatgatga gttatttcg gctgattatg gcgacgggtg tcaaatataa aaaagatgcg 1440
 ggcgtgggta cgctgatttc tatgatgttg ccgtattccg ctttcttctt gattgcgtgg 1500
 attgccttat tctgcatttg ggtatttgtt ttgggcctgc ccgtcggctc cggcgcgccc 1560
 acattctatc ccgcacctta a 1581

<210> 1256
 <211> 526
 <212> PRT
 <213> Neisseria meningitidis

<400> 1256
 Met His Ser Ile Tyr Phe Phe Lys Glu Lys Gln Met Ser Gln Thr Asp
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Thr Gln Arg Asp Gly Arg Phe Leu Arg Thr Val Glu Trp Leu Gly Asn
 20 25 30
 Met Leu Pro His Pro Val Thr Leu Phe Ile Ile Phe Ile Val Leu Leu
 35 40 45
 Leu Ile Ala Ser Ala Val Gly Ala Tyr Phe Gly Leu Ser Val Pro Asp
 50 55 60
 Pro Arg Pro Val Gly Ala Lys Gly Arg Ala Asp Asp Gly Leu Ile Tyr
 65 70 75 80
 Ile Val Ser Leu Leu Asn Ala Asp Gly Phe Ile Lys Ile Leu Thr His
 85 90 95
 Thr Val Lys Asn Phe Thr Gly Phe Ala Pro Leu Gly Thr Val Leu Val
 100 105 110
 Ser Leu Leu Gly Val Gly Ile Ala Glu Lys Ser Gly Leu Ile Ser Ala
 115 120 125
 Leu Met Arg Leu Leu Leu Thr Lys Ser Pro Arg Lys Leu Thr Thr Phe
 130 135 140
 Met Val Val Phe Thr Gly Ile Leu Ser Asn Thr Ala Ser Glu Leu Gly
 145 150 155 160
 Tyr Val Val Leu Ile Pro Leu Ser Ala Ile Ile Phe His Ser Leu Gly
 165 170 175
 Arg His Pro Leu Ala Gly Leu Ala Ala Ala Phe Ala Gly Val Ser Gly
 180 185 190
 Gly Tyr Ser Ala Asn Leu Phe Leu Ser Thr Ile Asp Pro Leu Leu Ala
 195 200 205
 Cys Ile Thr His Gln Ala Ala Val Val Gly Pro Glu Ala Asn Trp Phe
 210 215 220
 Phe Met Val Ala Ser Thr Phe Val Ile Ala Leu Ile Gly Tyr Phe Val
 225 230 235 240
 Thr Glu Lys Ile Val Glu Pro Gln Leu Gly Pro Tyr Gln Ser Asp Leu
 245 250 255
 Ser Gln Glu Glu Lys Asp Ile Arg His Ser Asn Glu Ile Thr Pro Leu
 260 265 270
 Glu Tyr Lys Gly Leu Ile Trp Ala Gly Val Val Phe Val Ala Leu Ser
 275 280 285
 Ala Leu Leu Ala Trp Ser Ile Val Pro Ala Asp Gly Ile Leu Arg His
 290 295 300
 Pro Glu Thr Gly Leu Val Ser Gly Ser Pro Phe Leu Lys Ser Ile Val
 305 310 315 320

Val Phe Ile Phe Leu Leu Phe Ala Leu Xaa Gly Xaa Val Tyr Gly Arg
 325 330 335
 Val Thr Arg Ser Leu Arg Gly Glu Gln Glu Val Val Asn Ala Met Ala
 340 345 350
 Glu Ser Met Ser Thr Leu Xaa Leu Xaa Leu Xaa Xaa Ile Phe Phe Ala
 355 360 365
 Ala Gln Phe Val Ala Phe Phe Asn Trp Thr Asn Ile Gly Gln Tyr Ile
 370 375 380
 Ala Val Lys Gly Ala Thr Phe Leu Lys Glu Val Gly Leu Gly Gly Ser
 385 390 395 400
 Val Leu Phe Ile Gly Phe Ile Leu Ile Cys Ala Phe Ile Asn Leu Met
 405 410 415
 Ile Gly Ser Ala Ser Ala Gln Trp Ala Val Thr Ala Pro Ile Phe Val
 420 425 430
 Pro Met Leu Met Leu Ala Gly Tyr Ala Pro Glu Val Ile Gln Ala Ala
 435 440 445
 Tyr Arg Ile Gly Asp Ser Val Thr Asn Ile Ile Thr Pro Met Met Ser
 450 455 460
 Tyr Phe Gly Leu Ile Met Ala Thr Val Ile Lys Tyr Lys Lys Asp Ala
 465 470 475 480
 Gly Val Gly Thr Leu Ile Ser Met Met Leu Pro Tyr Ser Ala Phe Phe
 485 490 495
 Leu Ile Ala Trp Ile Ala Leu Phe Cys Ile Trp Val Phe Val Leu Gly
 500 505 510
 Leu Pro Val Gly Pro Gly Ala Pro Thr Phe Tyr Pro Ala Pro
 515 520 525

<210> 1257

<211> 1602

<212> DNA

<213> Neisseria meningitidis

<400> 1257

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 tccgtccccc atccgcgccc tgttggtgcg aaaggacgtg ccgatgacgg tttgattcac 240
 gttgtcagcc tgctcgatgc tgacggtttg atcaaaatcc tgacgcatac cgtaaataat 300
 ttcaccggtt tcgcgcgctt gggaacggtg ttggtttctt tattgggcgt ggggattgcg 360
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 tatgtcgtcc taatcccttt gtccgccatc atctttcatt ccctcggccg ccatccgctt 540
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ggcacaatcg atccgctctt ggcaggcatc acccaacagg cggcgcaaat catccatccc 660
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tatggccggg taaccggaag tttgcgcggc gaacaggaag tcgttaatgc gatggccgaa 1080
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atgctgatgt tggccggcta cgcgccgaa gtcattcaag ccgcttaccg catcggtgat 1380
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<210> 1258

<211> 533

<212> PRT

<213> Neisseria meningitidis

<400> 1258

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Thr	Gln	Arg	Asp	Gly	Arg	Phe	Leu	Arg	Thr	Val	Glu	Trp	Leu	Gly	Asn
			20					25					30		
Met	Leu	Pro	His	Pro	Val	Thr	Leu	Phe	Ile	Ile	Phe	Ile	Val	Leu	Leu
		35					40					45			
Leu	Ile	Ala	Ser	Ala	Ala	Gly	Ala	Tyr	Phe	Gly	Leu	Ser	Val	Pro	Asp
	50					55					60				
Pro	Arg	Pro	Val	Gly	Ala	Lys	Gly	Arg	Ala	Asp	Asp	Gly	Leu	Ile	His
	65				70					75				80	
Val	Val	Ser	Leu	Leu	Asp	Ala	Asp	Gly	Leu	Ile	Lys	Ile	Leu	Thr	His
			85						90					95	
Thr	Val	Lys	Asn	Phe	Thr	Gly	Phe	Ala	Pro	Leu	Gly	Thr	Val	Leu	Val
			100					105					110		
Ser	Leu	Leu	Gly	Val	Gly	Ile	Ala	Glu	Lys	Ser	Gly	Leu	Ile	Ser	Ala
		115					120					125			
Leu	Met	Arg	Leu	Leu	Leu	Thr	Lys	Ser	Pro	Arg	Lys	Leu	Thr	Thr	Phe
	130					135					140				
Met	Val	Val	Phe	Thr	Gly	Ile	Leu	Ser	Asn	Thr	Ala	Ser	Glu	Leu	Gly
	145				150				155					160	
Tyr	Val	Val	Leu	Ile	Pro	Leu	Ser	Ala	Ile	Ile	Phe	His	Ser	Leu	Gly

165					170					175					
Arg	His	Pro	Leu	Ala	Gly	Leu	Ala	Ala	Ala	Phe	Ala	Gly	Val	Ser	Gly
			180					185					190		
Gly	Tyr	Ser	Ala	Asn	Leu	Phe	Leu	Gly	Thr	Ile	Asp	Pro	Leu	Leu	Ala
		195					200					205			
Gly	Ile	Thr	Gln	Gln	Ala	Ala	Gln	Ile	Ile	His	Pro	Asp	Tyr	Val	Val
	210						215					220			
Gly	Pro	Glu	Ala	Asn	Trp	Phe	Phe	Met	Val	Ala	Ser	Thr	Phe	Val	Ile
225						230					235				240
Ala	Leu	Ile	Gly	Tyr	Phe	Val	Thr	Glu	Lys	Ile	Val	Glu	Pro	Gln	Leu
				245					250					255	
Gly	Pro	Tyr	Gln	Ser	Asp	Leu	Ser	Gln	Glu	Glu	Lys	Asp	Ile	Arg	His
			260					265					270		
Ser	Asn	Glu	Ile	Thr	Pro	Leu	Glu	Tyr	Lys	Gly	Leu	Ile	Trp	Ala	Gly
		275					280					285			
Val	Val	Phe	Val	Ala	Leu	Ser	Ala	Leu	Leu	Ala	Trp	Ser	Ile	Val	Pro
	290						295				300				
Ala	Asp	Gly	Ile	Leu	Arg	His	Pro	Glu	Thr	Gly	Leu	Val	Ser	Gly	Ser
305						310					315				320
Pro	Phe	Leu	Lys	Ser	Ile	Val	Val	Phe	Ile	Phe	Leu	Leu	Phe	Ala	Leu
				325					330					335	
Pro	Gly	Ile	Val	Tyr	Gly	Arg	Val	Thr	Arg	Ser	Leu	Arg	Gly	Glu	Gln
			340					345					350		
Glu	Val	Val	Asn	Ala	Met	Ala	Glu	Ser	Met	Ser	Thr	Leu	Gly	Leu	Tyr
		355					360					365			
Leu	Val	Ile	Ile	Phe	Phe	Ala	Ala	Gln	Phe	Val	Ala	Phe	Phe	Asn	Trp
	370						375					380			
Thr	Asn	Ile	Gly	Gln	Tyr	Ile	Ala	Val	Lys	Gly	Ala	Thr	Phe	Leu	Lys
385						390					395				400
Glu	Val	Gly	Leu	Gly	Gly	Ser	Val	Leu	Phe	Ile	Gly	Phe	Ile	Leu	Ile
				405					410					415	
Cys	Ala	Phe	Ile	Asn	Leu	Met	Ile	Gly	Ser	Ala	Ser	Ala	Gln	Trp	Ala
			420					425					430		
Val	Thr	Ala	Pro	Ile	Phe	Val	Pro	Met	Leu	Met	Leu	Ala	Gly	Tyr	Ala
		435					440					445			
Pro	Glu	Val	Ile	Gln	Ala	Ala	Tyr	Arg	Ile	Gly	Asp	Ser	Val	Thr	Asn
	450					455					460				
Ile	Ile	Thr	Pro	Met	Met	Ser	Tyr	Phe	Gly	Leu	Ile	Met	Ala	Thr	Val

465 470 475 480
 Ile Lys Tyr Lys Lys Asp Ala Gly Val Gly Thr Leu Ile Ser Met Met
 485 490 495
 Leu Pro Tyr Ser Ala Phe Phe Leu Ile Ala Trp Ile Ala Leu Phe Cys
 500 505 510
 Ile Trp Val Phe Val Leu Gly Leu Pro Val Gly Pro Gly Ala Pro Thr
 515 520 525
 Phe Tyr Pro Ala Pro
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<210> 1259
 <211> 822
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 1259
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 agcaatcaca aggtttttga aattgccatc cagctcggtg cggttttggc ggtagtgttt 180
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 cgtttcgtcc tcaatcttgc cattgctttt atacctgccg ccgtgatggg gctggtgttc 300
 gacaaacaaa tcaaagagta tctgtttaac cccttgagtg ttgcagtcac gctgggtttt 360
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 gatgttgatg cattgcgtcc gattgatgcg ttgatgatcg gtgttgccca agtgtttgca 480
 ctggttcggg gtacgtcccg ttcgggcagt acggttatgg gcgggatgct ttggggaatc 540
 gagcggaata cgccaacgga gttttcattt ttcttgcccg ttccgatgat gggtgcagca 600
 acggcttatg atgtcctgaa acattaccga tttttcaccg tgcagtgatg cggtttgatt 660
 ttgataggct ttattgccgc ttttgtttcc ggtttggtag cggtttaaagc actgctgaag 720
 tttgtttcca agaaaaacta tatcccgttt gcctattacc gcattgtttt cggcattgtc 780
 atcataatat tgtggttgtc gggctggata agttgggaat ga 822

<210> 1260
 <211> 273
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 1260
 Met Asp Phe Leu Ile Val Leu Lys Ala Leu Met Met Gly Leu Val Glu
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 Gly Phe Thr Glu Phe Leu Pro Ile Ser Ser Thr Gly His Leu Ile Val
 20 25 30
 Phe Gly Asn Leu Ile Gly Phe His Ser Asn His Lys Val Phe Glu Ile
 35 40 45
 Ala Ile Gln Leu Gly Ala Val Leu Ala Val Val Phe Glu Tyr Arg Gln
 50 55 60
 Arg Phe Ser Asn Val Leu His Gly Val Gly Lys Asp Arg Lys Ala Asn

65	70	75	80
Arg Phe Val Leu Asn Leu Ala Ile Ala Phe Ile Pro Ala Ala Val Met	85	90	95
Gly Leu Leu Phe Asp Lys Gln Ile Lys Glu Tyr Leu Phe Asn Pro Leu	100	105	110
Ser Val Ala Val Met Leu Val Leu Gly Gly Phe Phe Ile Leu Trp Val	115	120	125
Glu Lys Arg Gln Ser Arg Ala Glu Pro Lys Ile Ala Asp Val Asp Ala	130	135	140
Leu Arg Pro Ile Asp Ala Leu Met Ile Gly Val Ala Gln Val Phe Ala	145	150	155
Leu Val Pro Gly Thr Ser Arg Ser Gly Ser Thr Val Met Gly Gly Met	165	170	175
Leu Trp Gly Ile Glu Arg Lys Thr Ala Thr Glu Phe Ser Phe Phe Leu	180	185	190
Ala Val Pro Met Met Val Ala Ala Thr Ala Tyr Asp Val Leu Lys His	195	200	205
Tyr Arg Phe Phe Thr Leu His Asp Val Gly Leu Ile Leu Ile Gly Phe	210	215	220
Ile Ala Ala Phe Val Ser Gly Leu Val Ala Val Lys Ala Leu Leu Lys	225	230	235
Phe Val Ser Lys Lys Asn Tyr Ile Pro Phe Ala Tyr Tyr Arg Ile Val	245	250	255
Phe Gly Ile Val Ile Ile Ile Leu Trp Leu Ser Gly Trp Ile Ser Trp	260	265	270

Glu

<210> 1261

<211> 734

<212> DNA

<213> Neisseria meningitidis

<400> 1261

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agcaatcaca aggtttttga aattgccatc cagctcggtg cagttttggc ggtagtggtt 180
gaataccggc aacgtttcag caatgtgttg cacggcttgg gaaaagaccg gaaagccaac 240
cgcttcgtcc ttaatcttgc cattgctttt atacctgccg ccgtgatggg gctgttggtc 300
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grcggttttt ytattttgtg ggtggagaaa cgccaaagcc gagcagagcc taaaattgcc 420
gatgttgatg cattgcgtcc gattgatgcc ttgatgatcg gcgttgccca agtgtttgca 480
ctggttcccg gtacgtcccg ttcgggcagt acgattatgg gcgggatgct ttggggcatc 540

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gaacggaaaa ctgcgacaga attctcggtt ttcttggtg tgccgatgat gggtgccgca 600
acggcttatg atgtcctgaa acattaccga ttttcaccc tgcgatgatg cggtttgatt 660

ctgataggct ttattgctgc ctttgtttca ggcttggtag cggtaaaagc gttgctgagg 720
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<210> 1262

<211> 244

<212> PRT

<213> Neisseria meningitidis

<400> 1262

Met Asp Phe Leu Ile Val Leu Lys Ala Leu Met Met Gly Leu Val Glu
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Gly Phe Thr Glu Phe Leu Pro Ile Ser Ser Thr Gly His Leu Ile Val
20 25 30

Phe Gly Asn Leu Ile Gly Phe His Ser Asn His Lys Val Phe Glu Ile
35 40 45

Ala Ile Gln Leu Gly Ala Val Leu Ala Val Val Phe Glu Tyr Arg Gln
50 55 60

Arg Phe Ser Asn Val Leu His Gly Leu Gly Lys Asp Arg Lys Ala Asn
65 70 75 80

Arg Phe Val Leu Asn Leu Ala Ile Ala Phe Ile Pro Ala Ala Val Met
85 90 95

Gly Leu Leu Phe Gly Xaa Gln Ile Lys Glu Xaa Leu Phe Asn Pro Leu
100 105 110

Ser Val Ala Val Met Leu Val Leu Xaa Gly Phe Xaa Ile Leu Trp Val
115 120 125

Glu Lys Arg Gln Ser Arg Ala Glu Pro Lys Ile Ala Asp Val Asp Ala
130 135 140

Leu Arg Pro Ile Asp Ala Leu Met Ile Gly Val Ala Gln Val Phe Ala
145 150 155 160

Leu Val Pro Gly Thr Ser Arg Ser Gly Ser Thr Ile Met Gly Gly Met
165 170 175

Leu Trp Gly Ile Glu Arg Lys Thr Ala Thr Glu Phe Ser Phe Phe Leu
180 185 190

Ala Val Pro Met Met Val Ala Ala Thr Ala Tyr Asp Val Leu Lys His
195 200 205

Tyr Arg Phe Phe Thr Leu His Asp Val Gly Leu Ile Leu Ile Gly Phe
210 215 220

Ile Ala Ala Phe Val Ser Gly Leu Val Ala Val Lys Ala Leu Leu Arg
225 230 235 240

Phe Val Ser Gly

<210> 1263

<211> 822

<212> DNA

<213> Neisseria meningitidis

<400> 1263

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agcaatcaca aggtttttga aattaccatc cagctcggtg cggttttggc ggtagtggtt 180
gaataccggc agcgtttcag caatgtgttg catggcgtgg gaaaagaccg gaaagccaac 240
cgtttcgtcc ttaatcttgc cattgctttt atacctgccg ccgtgatggg gctggtgttc 300
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gatgttgatg cattgcgtcc gattgatgcg ttgatgatcg gcgttgccca agtgtttgca 480
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gagcggaaaa cggcaacgga gttttcattt ttcttggccg ttccgatgat ggttgcagca 600
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ttgattggct ttgttgctgc ctttgtttca ggcttgggtg cgggtcaaagc gttgctgagg 720
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atcattatat tgtggctgtc aggtgggata agttgggaat ga 822

<210> 1264

<211> 273

<212> PRT

<213> Neisseria meningitidis

<400> 1264

Met Asp Phe Leu Ile Val Leu Lys Ala Leu Met Met Gly Leu Val Glu
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Gly Phe Thr Glu Phe Leu Pro Ile Ser Ser Thr Gly His Leu Ile Val
20 25 30

Phe Gly Asn Leu Ile Asp Phe His Ser Asn His Lys Val Phe Glu Ile
35 40 45

Thr Ile Gln Leu Gly Ala Val Leu Ala Val Val Phe Glu Tyr Arg Gln
50 55 60

Arg Phe Ser Asn Val Leu His Gly Val Gly Lys Asp Arg Lys Ala Asn
65 70 75 80

Arg Phe Val Leu Asn Leu Ala Ile Ala Phe Ile Pro Ala Ala Val Met
85 90 95

Gly Leu Leu Phe Gly Lys Gln Ile Lys Glu Tyr Leu Phe Asn Pro Leu
100 105 110

Ser Val Ala Val Met Leu Val Leu Gly Gly Phe Phe Ile Leu Trp Val
115 120 125

Glu Lys Arg Gln Ser Arg Ala Glu Pro Lys Ile Val Asp Val Asp Ala
 130 135 140
 Leu Arg Pro Ile Asp Ala Leu Met Ile Gly Val Ala Gln Val Phe Ala
 145 150 155 160
 Leu Val Pro Gly Thr Ser Arg Ser Gly Ser Thr Ile Met Gly Gly Met
 165 170 175
 Leu Trp Gly Ile Glu Arg Lys Thr Ala Thr Glu Phe Ser Phe Phe Leu
 180 185 190
 Ala Val Pro Met Met Val Ala Ala Thr Ala Tyr Asp Val Leu Lys His
 195 200 205
 Tyr Arg Phe Phe Thr Leu His Asp Val Gly Leu Ile Leu Ile Gly Phe
 210 215 220
 Val Ala Ala Phe Val Ser Gly Leu Val Ala Val Lys Ala Leu Leu Arg
 225 230 235 240
 Phe Val Ser Lys Lys Asn Tyr Ile Pro Phe Ala Tyr Tyr Arg Ile Val
 245 250 255
 Phe Gly Ile Ala Ile Ile Ile Leu Trp Leu Ser Gly Trp Ile Ser Trp
 260 265 270

Glu

<210> 1265
 <211> 804
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1265
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 gcgttcaaaa tcccggtcc gtcgaagcag cctgcagaaa cggaatcct gaaactgaaa 180
 aaccagccta aggaagacat ccaacctgaa ccggccgacg aaaacgcctt gtccgaaccg 240
 gatgttgcca aagaggcaga gcagtcggat gcggaaaaag ctgccgacaa gcagcccggt 300
 gccgacaaaag ccgacgaggt tgaagaaaag gcgggcgagc cggaacggga agagccggac 360
 ggacaggcag tgcgcaagaa agcactgact gaagagcgtg aacaaaccgt cagggaaaaa 420
 gcgcagaaga aagatgccga aacggttaaa aaaaaagcgg taaaaccgtc taaagaaaca 480
 gagaaaaaag cttcaaaaaga agagaaaaag gcggcgaaag aaaaagttgc acccaaaccg 540
 accccggaac aaatcctcaa cagccgcagt atcgaaaaag cgcgtagtgc cgctgccaaa 600
 gaagtgcaga aaatgaaaaa ctttgggcaa ggcggaagcc aacgcattat ctgcaaatgg 660
 gcgcgtatgc cgaaccccg ggcgcggaag ggacgcgtgc caaactggca atcttgggca 720
 tatcttccga agtggtcggc tatcaggcgg gacataaaac gctttaccgc gtgcaaagcg 780
 gcaatatgtc cgccgatgcg gtga 804

<210> 1266
 <211> 267
 <212> PRT

<213> Neisseria gonorrhoeae

<400> 1266

Met Phe Met Asn Lys Phe Ser Gln Ser Gly Lys Gly Leu Ser Gly Phe
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Phe Phe Gly Leu Ile Leu Ala Thr Val Ile Ile Ala Gly Ile Leu Leu
20 25 30

Tyr Leu Asn Gln Gly Gly Gln Asn Ala Phe Lys Ile Pro Ala Pro Ser
35 40 45

Lys Gln Pro Ala Glu Thr Glu Ile Leu Lys Leu Lys Asn Gln Pro Lys
50 55 60

Glu Asp Ile Gln Pro Glu Pro Ala Asp Gln Asn Ala Leu Ser Glu Pro
65 70 75 80

Asp Val Ala Lys Glu Ala Glu Gln Ser Asp Ala Glu Lys Ala Ala Asp
85 90 95

Lys Gln Pro Val Ala Asp Lys Ala Asp Glu Val Glu Glu Lys Ala Gly
100 105 110

Glu Pro Glu Arg Glu Glu Pro Asp Gly Gln Ala Val Arg Lys Lys Ala
115 120 125

Leu Thr Glu Glu Arg Glu Gln Thr Val Arg Glu Lys Ala Gln Lys Lys
130 135 140

Asp Ala Glu Thr Val Lys Lys Lys Ala Val Lys Pro Ser Lys Glu Thr
145 150 155 160

Glu Lys Lys Ala Ser Lys Glu Glu Lys Lys Ala Ala Lys Glu Lys Val
165 170 175

Ala Pro Lys Pro Thr Pro Glu Gln Ile Leu Asn Ser Arg Ser Ile Glu
180 185 190

Lys Ala Arg Ser Ala Ala Ala Lys Glu Val Gln Lys Met Lys Asn Phe
195 200 205

Gly Gln Gly Gly Ser Gln Arg Ile Ile Cys Lys Trp Ala Arg Met Pro
210 215 220

Asn Pro Gly Ala Arg Lys Gly Ser Val Pro Asn Trp Gln Ser Trp Ala
225 230 235 240

Tyr Leu Pro Lys Trp Ser Ala Ile Arg Arg Asp Ile Lys Arg Phe Thr
245 250 255

Ala Cys Lys Ala Ala Ile Cys Pro Pro Met Arg
260 265

<210> 1267

<211> 759

<212> DNA

<213> *Neisseria meningitidis*

<400> 1267

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gaaatcctga aaccgmawaa ccagcytaag gaagacatcc aacctgawcc ggccgatcaa 180
aacgccttgt ccgaaccgga tgctgcgaca gaggcagagc agtcggatgc ggaaaawgct 240
gccgacaagc agcccgttgc cgataaagcc gacgaggttg aagaaaaggc gggcgagccg 300
gaacgggaag agccggacgg acaggcagtg cgtaagaaag cgctgacgga agagcgtgaa 360
caaaccgtca gggaaaaagc gcagaagaaa gatgccgaaa cggttaaaaw acaagcggta 420
aaaccgtcta aagaaacaga gaaaaaagct tcaaaagaag agaaaaaggc ggcgaaggaa 480
aaagttgcac ccaaaccaac cccggaacaa atcctcaaca gcggcagcat cgaaaaagcg 540
cgcagtgccg ccgccaaga agtgcagaaa atgaaaacgc cgacaaggcg gaagcaacgc 600
attatctgca aatgggcgcg tatgccgacc gtcagagcgc ggaagggcag cgtgccaaac 660
tggcaatctt gggcataatct tccaaggtgg tcggttatca ggcgggacat aaaacgcttt 720
accgggtgca aagcggcaat atgtctgccg atgcggtga 759
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<210> 1268

<211> 252

<212> PRT

<213> *Neisseria meningitidis*

<400> 1268

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Gly Leu Phe Phe Gly Leu Ile Leu Ala Thr Val Ile Ile Ala Gly Ile
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Leu Phe Tyr Leu Asn Gln Ser Gly Gln Asn Ala Phe Lys Ile Pro Ala
 20             25            30

Ser Ser Lys Gln Pro Ala Glu Thr Glu Ile Leu Lys Pro Xaa Asn Gln
 35             40            45

Xaa Lys Glu Asp Ile Gln Pro Xaa Pro Ala Asp Gln Asn Ala Leu Ser
 50             55            60

Glu Pro Asp Ala Ala Thr Glu Ala Glu Gln Ser Asp Ala Glu Xaa Ala
 65             70            75            80

Ala Asp Lys Gln Pro Val Ala Asp Lys Ala Asp Glu Val Glu Glu Lys
 85             90            95

Ala Gly Glu Pro Glu Arg Glu Glu Pro Asp Gly Gln Ala Val Arg Lys
100            105            110

Lys Ala Leu Thr Glu Glu Arg Glu Gln Thr Val Arg Glu Lys Ala Gln
115            120            125

Lys Lys Asp Ala Glu Thr Val Lys Xaa Gln Ala Val Lys Pro Ser Lys
130            135            140

Glu Thr Glu Lys Lys Ala Ser Lys Glu Glu Lys Lys Ala Ala Lys Glu
145            150            155            160

Lys Val Ala Pro Lys Pro Thr Pro Glu Gln Ile Leu Asn Ser Gly Ser
165            170            175
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Ile Glu Lys Ala Arg Ser Ala Ala Ala Lys Glu Val Gln Lys Met Lys
180 185 190

Thr Pro Thr Arg Arg Lys Gln Arg Ile Ile Cys Lys Trp Ala Arg Met
195 200 205

Pro Thr Val Arg Ala Arg Lys Gly Ser Val Pro Asn Trp Gln Ser Trp
210 215 220

Ala Tyr Leu Pro Arg Trp Ser Val Ile Arg Arg Asp Ile Lys Arg Phe
225 230 235 240

Thr Gly Cys Lys Ala Ala Ile Cys Leu Pro Met Arg
245 250

<210> 1269

<211> 801

<212> DNA

<213> Neisseria meningitidis

<400> 1269

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gcgttcaaaa tcccggttcc gtcgaagcag cctgcagaaa cggaaatcct gaaaccgaaa 180
aaccagccta aggaagacat ccaacctgaa ccggccgata aaaacgcctt gtccgaaccg 240
gatgctgcga aagaggcaga gcagtcggat gcggaaaaag ctgccgacaa gcagcccgtt 300
gccgacaaaag ccgacgaggt tgaggaaaaag gcggacgagc cggagcggga aaagtcggac 360
ggacaggcag tgcgcaagaa agcactgacg gaagagcgtg aacaaaaccgt cggggaaaaa 420
gcgcagaaga aagatgccga aacggttaaa aaacaagcgg taaaaccatc taaagaaaca 480
gagaaaaaag cttcaaaaaga agagaaaaag gcggagaagg aaaaagttgc acccaaaccg 540
accccggaac aaatcctcaa cagcggcagc atcgaaaaag cgcgcagtgc cgctgccaaa 600
gaagtgcaga aaatgaaaac gccgacaagg cggaagcaac gcattatctg caaatgggag 660
cgtatgccga ccgccggagc gcggaagggc agcgtgccaa actggcaatc ttgggcatat 720
cttccaaggt ggtcggttat caggcgggac ataaaacgct ttaccgggtg caaagcggca 780
atatgtctgc cgatgcggtg a 801
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<210> 1270

<211> 266

<212> PRT

<213> Neisseria meningitidis

<400> 1270

Met Phe Met Asn Lys Phe Ser Gln Ser Gly Lys Gly Leu Ser Gly Phe
1 5 10 15

Phe Phe Gly Leu Ile Leu Ala Thr Val Ile Ile Ala Gly Ile Leu Phe
20 25 30

Tyr Leu Asn Gln Ser Gly Gln Asn Ala Phe Lys Ile Pro Val Pro Ser
35 40 45

Lys Gln Pro Ala Glu Thr Glu Ile Leu Lys Pro Lys Asn Gln Pro Lys
50 55 60

Glu Asp Ile Gln Pro Glu Pro Ala Asp Gln Asn Ala Leu Ser Glu Pro
 65 70 75 80
 Asp Ala Ala Lys Glu Ala Glu Gln Ser Asp Ala Glu Lys Ala Ala Asp
 85 90 95
 Lys Gln Pro Val Ala Asp Lys Ala Asp Glu Val Glu Glu Lys Ala Asp
 100 105 110
 Glu Pro Glu Arg Glu Lys Ser Asp Gly Gln Ala Val Arg Lys Lys Ala
 115 120 125
 Leu Thr Glu Glu Arg Glu Gln Thr Val Gly Glu Lys Ala Gln Lys Lys
 130 135 140
 Asp Ala Glu Thr Val Lys Lys Gln Ala Val Lys Pro Ser Lys Glu Thr
 145 150 155 160
 Glu Lys Lys Ala Ser Lys Glu Glu Lys Lys Ala Glu Lys Glu Lys Val
 165 170 175
 Ala Pro Lys Pro Thr Pro Glu Gln Ile Leu Asn Ser Gly Ser Ile Glu
 180 185 190
 Lys Ala Arg Ser Ala Ala Ala Lys Glu Val Gln Lys Met Lys Thr Pro
 195 200 205
 Thr Arg Arg Lys Gln Arg Ile Ile Cys Lys Trp Ala Arg Met Pro Thr
 210 215 220
 Ala Gly Ala Arg Lys Gly Ser Val Pro Asn Trp Gln Ser Trp Ala Tyr
 225 230 235 240
 Leu Pro Arg Trp Ser Val Ile Arg Arg Asp Ile Lys Arg Phe Thr Gly
 245 250 255
 Cys Lys Ala Ala Ile Cys Leu Pro Met Arg
 260 265

<210> 1271

<211> 867

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1271

atgaaaacct tcttcaaaac cctttcgacc gcgtcactcg cgctcatcct cgcagcctgc 60
 ggcggtcaaa aagacagcgc gccgcagcc tctgcgcgcg ccccttctgc cgataacggc 120
 gcggcgaaaa aagaaatcgt cttcggcacg accgtgggcg acttcggcga tatggtcaaa 180
 gaacaaatcc aagccgagct ggagaaaaaa ggctacaccg tcaaattggt cgaatttacc 240
 gactatgtgc gccgaatct ggcattggcg gagggcgagt tggacatcaa cgtcttccaa 300
 cacaaccct atcttgacga tttcaaaaaa gaacacaacc tggacatcac cgaagccttc 360
 caagtgcga cgcgccttt gggactgtat ccgggcaaac tgaaatcgct ggaagaagtc 420
 aaagacggca gcaccgtatc cgcgcccaac gaccgtcca acttcgcacg cgccttggtg 480
 atgctgaacg aactgggttg gatcaaaactc aaagacggca tcaatccgct gaccgcatcc 540
 aaagccgaca tcgcggaaaaa cctgaaaaac atcaaaatcg tcgagcttga agccgcacaa 600

ctgccgcgca gccgcgccga cgtggatttt gccgtcgtca acggcaacta cgccataagc 660
agcggcatga agctgaccga agccctgttc caagagccga gctttgccta tgtcaactgg 720
tctgccgtca aaaccgccga caaagacagc caatggctta aagacgtaac cgaggcctat 780
aactccgacg cgttcaaagc ctacgcgcac aaacgcttcg agggctacaa atacccctgcc 840
gcatggaatg aaggcgcagc caaataa 867

<210> 1272

<211> 288

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1272

Met	Lys	Thr	Phe	Phe	Lys	Thr	Leu	Ser	Thr	Ala	Ser	Leu	Ala	Leu	Ile
1				5					10					15	
Leu	Ala	Ala	Cys	Gly	Gly	Gln	Lys	Asp	Ser	Ala	Pro	Ala	Ala	Ser	Ala
			20					25					30		
Ala	Ala	Pro	Ser	Ala	Asp	Asn	Gly	Ala	Ala	Lys	Lys	Glu	Ile	Val	Phe
		35					40					45			
Gly	Thr	Thr	Val	Gly	Asp	Phe	Gly	Asp	Met	Val	Lys	Glu	Gln	Ile	Gln
	50					55					60				
Ala	Glu	Leu	Glu	Lys	Lys	Gly	Tyr	Thr	Val	Lys	Leu	Val	Glu	Phe	Thr
	65				70					75					80
Asp	Tyr	Val	Arg	Pro	Asn	Leu	Ala	Leu	Ala	Glu	Gly	Glu	Leu	Asp	Ile
				85					90					95	
Asn	Val	Phe	Gln	His	Lys	Pro	Tyr	Leu	Asp	Asp	Phe	Lys	Lys	Glu	His
			100					105					110		
Asn	Leu	Asp	Ile	Thr	Glu	Ala	Phe	Gln	Val	Pro	Thr	Ala	Pro	Leu	Gly
		115					120					125			
Leu	Tyr	Pro	Gly	Lys	Leu	Lys	Ser	Leu	Glu	Glu	Val	Lys	Asp	Gly	Ser
	130					135					140				
Thr	Val	Ser	Ala	Pro	Asn	Asp	Pro	Ser	Asn	Phe	Ala	Arg	Ala	Leu	Val
145					150					155					160
Met	Leu	Asn	Glu	Leu	Gly	Trp	Ile	Lys	Leu	Lys	Asp	Gly	Ile	Asn	Pro
			165						170					175	
Leu	Thr	Ala	Ser	Lys	Ala	Asp	Ile	Ala	Glu	Asn	Leu	Lys	Asn	Ile	Lys
			180					185					190		
Ile	Val	Glu	Leu	Glu	Ala	Ala	Gln	Leu	Pro	Arg	Ser	Arg	Ala	Asp	Val
	195						200					205			
Asp	Phe	Ala	Val	Val	Asn	Gly	Asn	Tyr	Ala	Ile	Ser	Ser	Gly	Met	Lys
	210					215					220				
Leu	Thr	Glu	Ala	Leu	Phe	Gln	Glu	Pro	Ser	Phe	Ala	Tyr	Val	Asn	Trp
225					230					235					240

Ser Ala Val Lys Thr Ala Asp Lys Asp Ser Gln Trp Leu Lys Asp Val
245 250 255

Thr Glu Ala Tyr Asn Ser Asp Ala Phe Lys Ala Tyr Ala His Lys Arg
260 265 270

Phe Glu Gly Tyr Lys Tyr Pro Ala Ala Trp Asn Glu Gly Ala Ala Lys
275 280 285

<210> 1273
<211> 117
<212> DNA
<213> Neisseria meningitidis

<400> 1273
caatggcctta aagacgtaac cgaggcctat aactccgacg cgttcaaagc ctacgcgcac 60
aaacgcttcg agggctacaa atcccctgcc gcatggaatg aaggcgcagc caaataa 117

<210> 1274
<211> 38
<212> PRT
<213> Neisseria meningitidis

<400> 1274
Gln Trp Leu Lys Asp Val Thr Glu Ala Tyr Asn Ser Asp Ala Phe Lys
1 5 10 15

Ala Tyr Ala His Lys Arg Phe Glu Gly Tyr Lys Ser Pro Ala Ala Trp
20 25 30

Asn Glu Gly Ala Ala Lys
35

<210> 1275
<211> 864
<212> DNA
<213> Neisseria meningitidis

<400> 1275
atgaaaacct tcttcaaaac cctttccgcc gccgcactcg cgctcactct cgccgcctgc 60
ggcggtcaaa aagatagcgc gccgcgcgca tccgcttctg ccgccgccga caacggcgcg 120
gcgaaaaaag naatcgtctt cggcacgacc gtcggcgact tcggcgatat ggtcaaagaa 180
caaatccaac ccgagctgga gaaaaaaggc tacaccgtca aactggctga gtttaccgac 240
tatgtgcgcc cgaatctggc attggctgag gccgagtngg acatcaacgt cttccaacac 300
aaaccctatc ttgacgactt caaaaaagaa cacaatctgg acatcaccga agtcttccaa 360
gtgccgaccg cgcttttggg actgtaccgg ggcaagctga aatcgctgga agaagtcaaa 420
gacggcagca ccgtatccgc gcccaacgac ccgtccaact tcgcccgcgt cttggtgatg 480
ctcgacgaac tgggttgat caaactcaaa ganggcatca atccgctgac cgcattccaa 540

gcggacattg ccgaaaacct gaaaaacatc aaaatcgtcg agcttgaagc cgcgcaactg 600
 ccgcgtagcc ggcgcgacgt ggattttgnc gtcgtcaacg gcaantacgc cataagcagc 660
 ggcatgaagc tgaccgaagc cctgttccaa gaaccgagct ttgcctatgt caactgggtct 720
 gccgtcaaaa ccgccgacaa agacagccaa tggcttaaag acgtaaccga ggctataaac 780
 tccgacgcgt tcaaagccta cgcgcacaaa cgcttcgagg gctacaaatc cctgcccga 840
 tggaatgaag gcgcagccaa ataa 864

<210> 1276

<211> 287

<212> PRT

<213> Neisseria meningitidis

<400> 1276

Met	Lys	Thr	Phe	Phe	Lys	Thr	Leu	Ser	Ala	Ala	Ala	Leu	Ala	Leu	Ile
1				5					10					15	
Leu	Ala	Ala	Cys	Gly	Gly	Gln	Lys	Asp	Ser	Ala	Pro	Ala	Ala	Ser	Ala
			20					25						30	
Ser	Ala	Ala	Ala	Asp	Asn	Gly	Ala	Ala	Lys	Lys	Xaa	Ile	Val	Phe	Gly
			35				40					45			
Thr	Thr	Val	Gly	Asp	Phe	Gly	Asp	Met	Val	Lys	Glu	Gln	Ile	Gln	Pro
	50					55					60				
Glu	Leu	Glu	Lys	Lys	Gly	Tyr	Thr	Val	Lys	Leu	Val	Glu	Phe	Thr	Asp
65					70					75					80
Tyr	Val	Arg	Pro	Asn	Leu	Ala	Leu	Ala	Glu	Gly	Glu	Xaa	Asp	Ile	Asn
				85					90					95	
Val	Phe	Gln	His	Lys	Pro	Tyr	Leu	Asp	Asp	Phe	Lys	Lys	Glu	His	Asn
			100					105					110		
Leu	Asp	Ile	Thr	Glu	Val	Phe	Gln	Val	Pro	Thr	Ala	Pro	Leu	Gly	Leu
	115						120					125			
Tyr	Pro	Gly	Lys	Leu	Lys	Ser	Leu	Glu	Glu	Val	Lys	Asp	Gly	Ser	Thr
	130					135						140			
Val	Ser	Ala	Pro	Asn	Asp	Pro	Ser	Asn	Phe	Ala	Arg	Val	Leu	Val	Met
145				150						155					160
Leu	Asp	Glu	Leu	Gly	Trp	Ile	Lys	Leu	Lys	Xaa	Gly	Ile	Asn	Pro	Leu
			165					170					175		
Thr	Ala	Ser	Lys	Ala	Asp	Ile	Ala	Glu	Asn	Leu	Lys	Asn	Ile	Lys	Ile
			180					185					190		
Val	Glu	Leu	Glu	Ala	Ala	Gln	Leu	Pro	Arg	Ser	Arg	Ala	Asp	Val	Asp
	195						200					205			
Phe	Xaa	Val	Val	Asn	Gly	Xaa	Tyr	Ala	Ile	Ser	Ser	Gly	Met	Lys	Leu
210					215					220					
Thr	Glu	Ala	Leu	Phe	Gln	Glu	Pro	Ser	Phe	Ala	Tyr	Val	Asn	Trp	Ser

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<400> 1278
Met Leu Asn Arg Val Phe Tyr Arg Ile Leu Gly Val Ala Asp Asn Leu
  1             5             10             15
Tyr Pro Cys Leu Ser Asp Phe Cys Phe Phe Thr Ile Ile Ala Gly Leu
                20             25             30
Pro Leu Gln Ala Val Leu Trp Glu Arg Arg Met Met Val Arg Arg Leu
          35             40             45
Ile Ile Gly Ile Ser Gly Ala Ser Gly Phe Gln Tyr Gly Val Lys Ala
  50             55             60
Leu Glu Leu Leu Arg Ala Gln Asp Val Glu Thr His Leu Val Val Ser
  65             70             75             80
Lys Gly Ala Glu Met Ala Arg Ala Ser Glu Thr Asp Tyr Thr Lys Asp
          85             90             95

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Glu Val Tyr Ala Leu Ala Asp Phe Val His Pro Ile Gly Asn Ile Gly
 100 105 110
 Ala Cys Ile Ala Ser Gly Thr Phe Lys Thr Asp Gly Met Leu Val Ala
 115 120 125
 Pro Cys Ser Met Arg Thr Leu Ala Ser Val Ala His Gly Phe Gly Asp
 130 135 140
 Asn Leu Leu Thr Arg Ala Ala Asp Val Val Leu Lys Glu Arg Arg Arg
 145 150 155 160
 Leu Val Leu Met Val Arg Glu Thr Pro Leu Asn Leu Ala His Leu Asp
 165 170 175
 Asn Met Lys Arg Val Thr Glu Met Gly Gly Val Val Phe Pro Pro Val
 180 185 190
 Pro Ala Met Tyr Arg Lys Pro Gln Thr Ala Asp Asp Ile Val Ala His
 195 200 205
 Ser Ile Ala His Thr Leu Ser Leu Phe Gly Ile Asp Thr Pro Asp Leu
 210 215 220
 Ala Glu Trp Gln Gly Met Ala Asp
 225 230

<210> 1279
 <211> 693
 <212> DNA
 <213> Neisseria meningitidis

<400> 1279
 atgttaaatac gggatatttta tcggatattg ggtggtgccc acaatttgta tccgcgttta 60
 tcggatttct gttttttcac tataatagcc ggtttgccc tgcaggcgg tttatgggaa 120
 aggcgatga tggtagcgcg tttgataatc ggcacagcg gggcgagcgg tttccaatac 180
 ggcgtgaagg ctttggaact tttgcgcgcg caagatgtcg aaacgcacct tgtggtatcg 240
 aaagtgcgcg agatggcgcg cgcttcggaa acggcttatg cgagagacga ggtatatgcc 300
 ttggcgact tcgtgcatcc gatcggaat atcggggcg gcattgccag cggtacgttt 360
 aaaacggatg ggatgctggt cgcacctgt tcgatgcgga cgcttgctc tgcgcgcac 420
 ggcttcggcg acaatctgct gacgcgtgcg gcggatgtgg ttttgaagga aaggcggcg 480
 ctggtgctga tggtagcgga aacgcgcgtg aacctgccc atttgacaa tatgaagcg 540
 gwaacggaaa tgggcggcg ggtgtttccc cctgttcctg cgatgtaccg caaacgcgag 600
 acggcgacg acatagtggc gcacagtgtt gcacacgctt tgcgctgtt cggaatcgat 660
 acgcccgtt cggcggaatg gcargaatg gcg 693

<210> 1280
 <211> 231
 <212> PRT
 <213> Neisseria meningitidis

<400> 1280
 Met Leu Asn Arg Val Phe Tyr Arg Ile Leu Gly Val Ala Asp Asn Leu
 1 5 10 15

Tyr Pro Arg Leu Ser Asp Phe Cys Phe Phe Thr Ile Ile Ala Gly Leu
 20 25 30
 Pro Leu Gln Ala Val Leu Trp Glu Arg Arg Met Met Val Arg Arg Leu
 35 40 45
 Ile Ile Gly Ile Ser Gly Ala Ser Gly Phe Gln Tyr Gly Val Lys Ala
 50 55 60
 Leu Glu Leu Leu Arg Ala Gln Asp Val Glu Thr His Leu Val Val Ser
 65 70 75 80
 Lys Gly Ala Glu Met Ala Arg Ala Ser Glu Thr Ala Tyr Ala Arg Asp
 85 90 95
 Glu Val Tyr Ala Leu Ala Asp Phe Val His Pro Ile Gly Asn Ile Gly
 100 105 110
 Ala Cys Ile Ala Ser Gly Thr Phe Lys Thr Asp Gly Met Leu Val Ala
 115 120 125
 Pro Cys Ser Met Arg Thr Leu Ala Ser Val Ala His Gly Phe Gly Asp
 130 135 140
 Asn Leu Leu Thr Arg Ala Ala Asp Val Val Leu Lys Glu Arg Arg Arg
 145 150 155 160
 Leu Val Leu Met Val Arg Glu Thr Pro Leu Asn Leu Ala His Leu Asp
 165 170 175
 Asn Met Lys Arg Xaa Thr Glu Met Gly Gly Val Val Phe Pro Pro Val
 180 185 190
 Pro Ala Met Tyr Arg Lys Pro Gln Thr Ala Asp Asp Ile Val Ala His
 195 200 205
 Ser Val Ala His Ala Leu Ser Leu Phe Gly Ile Asp Thr Pro Asp Ser
 210 215 220
 Ala Glu Trp Gln Gly Met Ala
 225 230

<210> 1281

<211> 699

<212> DNA

<213> *Neisseria meningitidis*

<400> 1281

atgttaaatac ggatatttta tcggatattg ggtgttgccg acaatttgta tccgtattta 60
 tcggatttct gttttttcac tataatagcc ggtttgccgt tgcaggcgg tttatgggaa 120
 aggcggatga tggtagggcg tttgataatc ggcatacgtg gggcgagcgg tttccaatac 180
 ggcgtgaagg ctttgganct tttacgcgcg caagatatcg aaacgcacct tgtgttatcg 240
 aaaggtgagg agatggcgcg cgcttcggaa acggnntatg cgagagacga ngtatatgcc 300
 ttggcggact tngtgcattc gatcggcaat atcggggcgt gcattgccag cggtagcttt 360
 aaaacggacg ggatgctggt cgccccctgt tcgatgcgga cgcttgccctc ggtcgtgcac 420

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ggcttcggcg acaacctctt gacgcgtgcg gcggatgtgg ttttgaagga aaggcggcgg 480
ctggtgctga tggcgcgga aacgccgctg aaccttgccc atttgacaa tatgaancgg 540
gtaacggaaa tggcgggcgt ggtgtttccc cctgttctg cgatgtaccg caaacgcgag 600
acggcggacg acatagtggc gcacagtgtt gcacacgctt tgctgctgtt cggaatcgat 660
acgccggatt cggcggaatg gcaggaatg gcggattaa 699

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<210> 1282
 <211> 232
 <212> PRT
 <213> *Neisseria meningitidis*

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<400> 1282
Met Leu Asn Arg Ile Phe Tyr Arg Ile Leu Gly Val Ala Asp Asn Leu
  1             5             10             15

Tyr Pro Tyr Leu Ser Asp Phe Cys Phe Phe Thr Ile Ile Ala Gly Leu
          20             25             30

Pro Leu Gln Ala Val Leu Trp Glu Arg Arg Met Met Val Arg Arg Leu
      35             40             45

Ile Ile Gly Ile Ser Gly Ala Ser Gly Phe Gln Tyr Gly Val Lys Ala
  50             55             60

Leu Xaa Leu Leu Arg Ala Gln Asp Ile Glu Thr His Leu Val Val Ser
  65             70             75             80

Lys Gly Ala Glu Met Ala Arg Ala Ser Glu Thr Xaa Tyr Ala Arg Asp
          85             90             95

Xaa Val Tyr Ala Leu Ala Asp Xaa Val His Pro Ile Gly Asn Ile Gly
      100             105             110

Ala Cys Ile Ala Ser Gly Thr Phe Lys Thr Asp Gly Met Leu Val Ala
      115             120             125

Pro Cys Ser Met Arg Thr Leu Ala Ser Val Val His Gly Phe Gly Asp
      130             135             140

Asn Leu Leu Thr Arg Ala Ala Asp Val Val Leu Lys Glu Arg Arg Arg
      145             150             155             160

Leu Val Leu Met Val Arg Glu Thr Pro Leu Asn Leu Ala His Leu Asp
      165             170             175

Asn Met Xaa Arg Val Thr Glu Met Gly Gly Val Val Phe Pro Pro Val
      180             185             190

Pro Ala Met Tyr Arg Lys Pro Gln Thr Ala Asp Asp Ile Val Ala His
      195             200             205

Ser Val Ala His Ala Leu Ser Leu Phe Gly Ile Asp Thr Pro Asp Ser
      210             215             220

Ala Glu Trp Gln Gly Met Ala Asp
      225             230

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<210> 1283
 <211> 699
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 1283
 atgttaaadc gggatattta tcggatattg ggtgttgccg acaatttgta tccgtgttta 60
 tcggatttct gttttttcac tataatagcc ggtttgccgt tgcaggcggg tttatgggaa 120
 aggcggatga tggtagcgcg tttgataatc ggcatcagcg ggcgagcgcg tttccaatac 180
 ggcgtgaagg ctttggaact tttgcgcgcg caagatgtcg aaacgcacct tgtggtatcg 240

 aaaggcgcgg agatggcgcg cgcttcggaa acggattata cgaaagacga agtatatgcc 300
 ttggctgatt tcgtccatcc gatcggcaat atcggggcgt gcattgccag cggtagcttt 360
 aaaacggacg ggatgctggt cgcaccctgt tcgatgcgga cgcttgctc tgtcgcgcac 420
 ggcttcggcg acaacctctt gacgcgtgcg gcggatgtgg ttttgaagga aaggcggcgg 480
 ctggtgctga tggtagcgca aacgccgctg aaccttgccc atttggacaa tatgaagcgg 540
 gtaacggaaa tgggcggcgt ggtgtttccc cctgttcctg cgatgtaccg caagccgcag 600
 acggcggacg acatagtggc gcacagtatc gcacacacgc tgtcgtctgt cggaatcgat 660
 acgccggatt tggcggaatg gcagggaatg gcggattaa 699

<210> 1284
 <211> 232
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 1284
 Met Leu Asn Arg Val Phe Tyr Arg Ile Leu Gly Val Ala Asp Asn Leu
 1 5 10 15
 Tyr Pro Cys Leu Ser Asp Phe Cys Phe Phe Thr Ile Ile Ala Gly Leu
 20 25 30
 Pro Leu Gln Ala Val Leu Trp Glu Arg Arg Met Met Val Arg Arg Leu
 35 40 45
 Ile Ile Gly Ile Ser Gly Ala Ser Gly Phe Gln Tyr Gly Val Lys Ala
 50 55 60
 Leu Glu Leu Leu Arg Ala Gln Asp Val Glu Thr His Leu Val Val Ser
 65 70 75 80
 Lys Gly Ala Glu Met Ala Arg Ala Ser Glu Thr Asp Tyr Thr Lys Asp
 85 90 95
 Glu Val Tyr Ala Leu Ala Asp Phe Val His Pro Ile Gly Asn Ile Gly
 100 105 110
 Ala Cys Ile Ala Ser Gly Thr Phe Lys Thr Asp Gly Met Leu Val Ala
 115 120 125
 Pro Cys Ser Met Arg Thr Leu Ala Ser Val Ala His Gly Phe Gly Asp
 130 135 140
 Asn Leu Leu Thr Arg Ala Ala Asp Val Val Leu Lys Glu Arg Arg Arg

145 150 155 160
 Leu Val Leu Met Val Arg Glu Thr Pro Leu Asn Leu Ala His Leu Asp
 165 170 175
 Asn Met Lys Arg Val Thr Glu Met Gly Gly Val Val Phe Pro Pro Val
 180 185 190
 Pro Ala Met Tyr Arg Lys Pro Gln Thr Ala Asp Asp Ile Val Ala His
 195 200 205
 Ser Ile Ala His Thr Leu Ser Leu Phe Gly Ile Asp Thr Pro Asp Leu
 210 215 220
 Ala Glu Trp Gln Gly Met Ala Asp
 225 230

<210> 1285
 <211> 699
 <212> DNA
 <213> Neisseria meningitidis

<400> 1285
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 tcggatttct gttttttcac tataatagcc ggtttgcccgt tgcaggccgt tttatgggaa 120
 aggcggatga tggtagcgcg tttgataatc ggcatcagcg gggcgagcgg tttccaatac 180
 ggcgtgaagg ctttggaact tttgcgcgcg caagatgtcg aaacgcacct tgttgtatcg 240
 aaaggtgcgg agatggcgcg cgcttcggaa acggcttatg cgagagacga ggtatatgcc 300
 ttggcggact tcgtgcatcc gatcggcaat atcggggcgt gcattgccag cgttacgttt 360
 aaaacggatg ggatgctggt gacccccctgt tcgatgcgga cgcttgccctc tgcgcgcac 420
 ggcttcggcg acaatctgct gacgcgtgcg gcggatgtgg ttttgaagga aaggcggcgg 480
 ctggtgctga tggtagcgga aacgccgctg aaccttgccc atttggacaa tatgaagcgg 540
 gtaacggaaa tgggcggcgt ggtgtttccc cctgttcctg cgatgtaccg caaaccgcag 600
 acggcggacg acatagtggc gcacagtgtt gcacacgctt tgcgctgtt cggaatcgat 660
 acgccggatt cggcggaatg gcagggaatg gcggattaa 699

<210> 1286
 <211> 232
 <212> PRT
 <213> Neisseria meningitidis

<400> 1286
 Met Leu Asn Arg Val Phe Tyr Arg Ile Leu Gly Val Ala Asp Asn Leu
 1 5 10 15
 Tyr Pro Arg Leu Ser Asp Phe Cys Phe Phe Thr Ile Ile Ala Gly Leu
 20 25 30
 Pro Leu Gln Ala Val Leu Trp Glu Arg Arg Met Met Val Arg Arg Leu
 35 40 45
 Ile Ile Gly Ile Ser Gly Ala Ser Gly Phe Gln Tyr Gly Val Lys Ala
 50 55 60
 Leu Glu Leu Leu Arg Ala Gln Asp Val Glu Thr His Leu Val Val Ser

65 70 75 80
 Lys Gly Ala Glu Met Ala Arg Ala Ser Glu Thr Ala Tyr Ala Arg Asp
 85 90 95
 Glu Val Tyr Ala Leu Ala Asp Phe Val His Pro Ile Gly Asn Ile Gly
 100 105 110
 Ala Cys Ile Ala Ser Gly Thr Phe Lys Thr Asp Gly Met Leu Val Ala
 115 120 125
 Pro Cys Ser Met Arg Thr Leu Ala Ser Val Ala His Gly Phe Gly Asp
 130 135 140
 Asn Leu Leu Thr Arg Ala Ala Asp Val Val Leu Lys Glu Arg Arg Arg
 145 150 155 160
 Leu Val Leu Met Val Arg Glu Thr Pro Leu Asn Leu Ala His Leu Asp
 165 170 175
 Asn Met Lys Arg Val Thr Glu Met Gly Gly Val Val Phe Pro Pro Val
 180 185 190
 Pro Ala Met Tyr Arg Lys Pro Gln Thr Ala Asp Asp Ile Val Ala His
 195 200 205
 Ser Val Ala His Ala Leu Ser Leu Phe Gly Ile Asp Thr Pro Asp Ser
 210 215 220
 Ala Glu Trp Gln Gly Met Ala Asp
 225 230

<210> 1287
 <211> 699
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 1287
 atgttaaadc ggatatttta tcggatattg ggtgttgccg acaatttgta tccgtattta 60
 tcggatttct gttttttcac tataatagcc ggtttgccgt tgcaggcggt tttatgggaa 120
 aggcggatga tggtaacggc tttgataatc ggcatcagtg gggcgagcgg tttccaatac 180
 ggcgtgaagg ctttgganct tttacgcgcg caagatatcg aaacgcacct tgtggtatcg 240
 aaaggtgcgg agatggcgcg cgcttcggaa acggnntatg cgagagacga ngatatatgcc 300
 ttggcggact tngtgcaccc gatcggcaat atcggggcgt gcattgccag cggtagcttt 360
 aaaacggacg ggatgctggt cgccttcgtg tcgatgcgga cgcttgccctc ggtcgtgcac 420
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 ctggtgctga tgggtgcgcga aacgcgcgtg aaoccttgccc atttggaaca tatgaancgg 540
 gtaacggaaa tgggcggcgt ggtgtttccc cctgttcctg cgatgtaccg caaacgcag 600
 acggcggacg acatagtggc gcacagtgtt gcacacgctt tgctcgtgtt cggaatcgat 660
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<210> 1288
 <211> 232
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 1288

Met Leu Asn Arg Ile Phe Tyr Arg Ile Leu Gly Val Ala Asp Asn Leu
1 5 10 15

Tyr Pro Tyr Leu Ser Asp Phe Cys Phe Phe Thr Ile Ile Ala Gly Leu
20 25 30

Pro Leu Gln Ala Val Leu Trp Glu Arg Arg Met Met Val Arg Arg Leu
35 40 45

Ile Ile Gly Ile Ser Gly Ala Ser Gly Phe Gln Tyr Gly Val Lys Ala
50 55 60

Leu Xaa Leu Leu Arg Ala Gln Asp Ile Glu Thr His Leu Val Val Ser
65 70 75 80

Lys Gly Ala Glu Met Ala Arg Ala Ser Glu Thr Xaa Tyr Ala Arg Asp
85 90 95

Xaa Val Tyr Ala Leu Ala Asp Xaa Val His Pro Ile Gly Asn Ile Gly
100 105 110

Ala Cys Ile Ala Ser Gly Thr Phe Lys Thr Asp Gly Met Leu Val Ala
115 120 125

Pro Cys Ser Met Arg Thr Leu Ala Ser Val Val His Gly Phe Gly Asp
130 135 140

Asn Leu Leu Thr Arg Ala Ala Asp Val Val Leu Lys Glu Arg Arg Arg
145 150 155 160

Leu Val Leu Met Val Arg Glu Thr Pro Leu Asn Leu Ala His Leu Asp
165 170 175

Asn Met Xaa Arg Val Thr Glu Met Gly Gly Val Val Phe Pro Pro Val
180 185 190

Pro Ala Met Tyr Arg Lys Pro Gln Thr Ala Asp Asp Ile Val Ala His
195 200 205

Ser Val Ala His Ala Leu Ser Leu Phe Gly Ile Asp Thr Pro Asp Ser
210 215 220

Ala Glu Trp Gln Gly Met Ala Asp
225 230

<210> 1289

<211> 1368

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1289

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tgccaaacg atttggtcgt cggacgcgac aaattgggcg gcattctgat tgaaacagtc 180

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<210> 1290

<211> 455

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1290

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Ser Leu Ser Pro Val Ala Ala Leu Ala Cys Arg Arg Ala Leu Gly Cys
      20             25             30

Leu Gly Leu Glu Thr Gln Ile Lys Trp Pro Asn Asp Leu Val Val Gly
 35             40             45

Arg Asp Lys Leu Gly Gly Ile Leu Ile Glu Thr Val Arg Ala Gly Gly
 50             55             60

Lys Thr Val Ala Val Val Gly Ile Gly Ile Asn Phe Val Leu Pro Lys
 65             70             75             80

Glu Val Glu Asn Ala Ala Ser Val Gln Ser Leu Phe Gln Thr Ala Ser
      85             90             95

Arg Arg Gly Asn Ala Asp Ala Ala Val Leu Leu Glu Thr Leu Leu Ala
 100             105             110

Glu Leu Gly Ala Val Leu Glu Gln Tyr Ala Glu Glu Gly Phe Ala Pro
 115             120             125

Phe Leu Asn Glu Tyr Glu Thr Ala Asn Arg Asp His Gly Lys Ala Val
 130             135             140

Leu Leu Leu Arg Asp Gly Glu Thr Val Cys Glu Gly Thr Val Lys Gly
 145             150             155             160

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Val	Asp	Gly	Arg	Gly	Val	Leu	His	Leu	Glu	Thr	Ala	Glu	Gly	Glu	Gln	165	170	175
Thr	Val	Val	Ser	Gly	Glu	Ile	Ser	Leu	Arg	Pro	Asp	Asn	Arg	Ser	Val	180	185	190
Ser	Val	Pro	Lys	Arg	Pro	Asp	Ser	Glu	Arg	Phe	Leu	Leu	Leu	Glu	Gly	195	200	205
Gly	Asn	Ser	Arg	Leu	Lys	Trp	Ala	Trp	Val	Glu	Asn	Gly	Thr	Phe	Ala	210	215	220
Thr	Val	Gly	Ser	Ala	Pro	Tyr	Arg	Asp	Leu	Ser	Pro	Leu	Gly	Ala	Glu	225	230	235
Trp	Ala	Glu	Lys	Ala	Asp	Gly	Asn	Val	Arg	Ile	Val	Gly	Cys	Ala	Val	245	250	255
Cys	Gly	Glu	Ser	Lys	Lys	Ala	Gln	Val	Lys	Glu	Gln	Leu	Ala	Arg	Lys	260	265	270
Ile	Glu	Trp	Leu	Pro	Ser	Ser	Ala	Gln	Ala	Leu	Gly	Ile	Arg	Asn	His	275	280	285
Tyr	Arg	His	Pro	Glu	Glu	His	Gly	Ser	Asp	Arg	Trp	Phe	Asn	Ala	Leu	290	295	300
Gly	Ser	Arg	Arg	Phe	Ser	Arg	Asn	Ala	Cys	Val	Val	Val	Ser	Cys	Gly	305	310	315
Thr	Ala	Val	Thr	Val	Asp	Ala	Leu	Thr	Asp	Asp	Gly	His	Tyr	Leu	Gly	325	330	335
Gly	Thr	Ile	Met	Pro	Gly	Phe	His	Leu	Met	Lys	Glu	Ser	Leu	Ala	Val	340	345	350
Arg	Thr	Ala	Asn	Leu	Asn	Arg	Pro	Ala	Gly	Lys	Arg	Tyr	Pro	Phe	Pro	355	360	365
Thr	Thr	Thr	Gly	Asn	Ala	Val	Ala	Ser	Gly	Met	Met	Asp	Ala	Val	Cys	370	375	380
Gly	Ser	Ile	Met	Met	Met	His	Gly	Arg	Leu	Lys	Glu	Lys	Asn	Gly	Ala	385	390	395
Gly	Lys	Pro	Val	Asp	Val	Ile	Ile	Thr	Gly	Gly	Gly	Ala	Ala	Lys	Val	405	410	415
Ala	Glu	Ala	Leu	Pro	Pro	Ala	Phe	Leu	Ala	Glu	Asn	Thr	Val	Arg	Val	420	425	430
Ala	Asp	Asn	Leu	Val	Ile	His	Gly	Leu	Leu	Asn	Leu	Ile	Ala	Ala	Glu	435	440	445
Gly	Gly	Glu	Ser	Glu	His	Ala										450	455	

<210> 1291
 <211> 1167
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 1291
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 aggacgggag gcaaaacggg tgccgtgggc ggtatcggca tcaattttgt cctgccaan 240
 gaagtagaaa atgccgcttc cgtgcaatcg ctgtttcaga cggcatcgcg gcggggcaat 300
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 gacggcggca acagccgggt caagtgggcg tgggtggaaa acggcacgtt cgcaaccgtc 480
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 ggaaatgtcc gcatcgctcg ttgcgtgtg tgcgagaaat tcaaaaaggc acaagtgcag 600
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 cgcaaccact accgccaccc cgaagaacac ggttcgcacc gctggttcaa cgccttgggc 720
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 gtcattcatta ccggcggcgg cgcggaacaa gttgccgaag ccctgccgcc tgcatttttg 1080
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<210> 1292
 <211> 389
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 1292
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 20 25 30
 Leu Gly Leu Asp Val Gln Ile Lys Trp Pro Asn Asp Leu Val Val Gly
 35 40 45
 Arg Asp Lys Leu Gly Gly Ile Leu Ile Glu Thr Val Arg Thr Gly Gly
 50 55 60
 Lys Thr Val Ala Val Val Gly Ile Gly Ile Asn Phe Val Leu Pro Xaa
 65 70 75 80
 Glu Val Glu Asn Ala Ala Ser Val Gln Ser Leu Phe Gln Thr Ala Ser
 85 90 95
 Arg Arg Gly Asn Ala Asp Ala Ala Val Leu Leu Xaa Xaa Xaa Xaa Xaa
 100 105 110

Xaa Xaa Xaa Glu Ile Ser Leu Arg Ser Asp Xaa Arg Pro Val Ser Val
115 120 125
Xaa Lys Arg Arg Asp Ser Glu Arg Phe Leu Leu Leu Asp Gly Gly Asn
130 135 140
Ser Arg Leu Lys Trp Ala Trp Val Glu Asn Gly Thr Phe Ala Thr Val
145 150 155 160
Gly Ser Ala Pro Tyr Arg Asp Leu Ser Pro Leu Gly Ala Glu Trp Ala
165 170 175
Glu Lys Ala Asp Gly Asn Val Arg Ile Val Gly Cys Ala Val Cys Gly
180 185 190
Glu Phe Lys Lys Ala Gln Val Gln Glu Gln Leu Ala Arg Lys Ile Glu
195 200 205
Trp Leu Pro Ser Ser Ala Gln Ala Leu Phe Gly Ile Arg Asn His Tyr
210 215 220
Arg His Pro Glu Glu His Gly Ser Asp Arg Trp Phe Asn Ala Leu Gly
225 230 235 240
Ser Arg Arg Phe Ser Arg Asn Ala Cys Val Val Val Ser Cys Gly Thr
245 250 255
Ala Val Thr Val Asp Ala Leu Thr Asp Asp Gly His Tyr Leu Gly Gly
260 265 270
Thr Ile Met Pro Gly Phe His Leu Met Lys Glu Ser Leu Ala Val Arg
275 280 285
Thr Ala Asn Leu Asn Arg His Ala Gly Lys Arg Tyr Pro Phe Pro Thr
290 295 300
Thr Thr Gly Asn Ala Val Ala Ser Gly Met Met Asp Ala Val Cys Gly
305 310 315 320
Ser Val Met Met Met His Gly Arg Leu Lys Glu Lys Thr Gly Ala Gly
325 330 335
Lys Pro Val Asp Val Ile Ile Thr Gly Gly Gly Ala Ala Lys Val Ala
340 345 350
Glu Ala Leu Pro Pro Ala Phe Leu Ala Glu Asn Thr Val Arg Val Ala
355 360 365
Asp Asn Leu Val Ile Tyr Gly Leu Leu Asn Met Ile Ala Ala Glu Gly
370 375 380
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<210> 1293

<211> 1368

<212> DNA

<213> *Neisseria meningitidis*

<400> 1293

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ccgcctgcat ttttggcgga aaataccgtg cggtggcgcg acaacctcgt cattcacggg 1320
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<210> 1294

<211> 455

<212> PRT

<213> *Neisseria meningitidis*

<400> 1294

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Ser Leu Ser Pro Val Ala Ala Val Ala Cys Arg Arg Ala Leu Ser Arg
      20             25             30

Leu Gly Leu Lys Thr Gln Ile Lys Trp Pro Asn Asp Leu Val Val Gly
 35             40             45

Arg Asp Lys Leu Gly Gly Ile Leu Ile Glu Thr Val Arg Thr Gly Gly
 50             55             60

Lys Thr Val Ala Val Val Gly Ile Gly Ile Asn Phe Val Leu Pro Lys
 65             70             75             80

Glu Val Glu Asn Ala Ala Ser Val Gln Ser Leu Phe Gln Thr Ala Ser
      85             90             95

Arg Arg Gly Asn Ala Asp Ala Ala Val Leu Leu Glu Thr Leu Leu Ala
 100             105             110
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Glu	Leu	Asp	Ala	Val	Leu	Leu	Gln	Tyr	Ala	Arg	Asp	Gly	Phe	Ala	Pro	115	120	125
Phe	Val	Ala	Glu	Tyr	Gln	Ala	Ala	Asn	Arg	Asp	His	Gly	Lys	Ala	Val	130	135	140
Leu	Leu	Leu	Arg	Asp	Gly	Glu	Thr	Val	Phe	Glu	Gly	Thr	Val	Lys	Gly	145	150	155
Val	Asp	Gly	Gln	Gly	Val	Leu	His	Leu	Glu	Thr	Ala	Glu	Gly	Lys	Gln	165	170	175
Thr	Val	Val	Ser	Gly	Glu	Ile	Ser	Leu	Arg	Ser	Asp	Asp	Arg	Pro	Val	180	185	190
Ser	Val	Pro	Lys	Arg	Arg	Asp	Ser	Glu	Arg	Phe	Leu	Leu	Leu	Asp	Gly	195	200	205
Gly	Asn	Ser	Arg	Leu	Lys	Trp	Ala	Trp	Val	Glu	Asn	Gly	Thr	Phe	Ala	210	215	220
Thr	Val	Gly	Ser	Ala	Pro	Tyr	Arg	Asp	Leu	Ser	Pro	Leu	Gly	Ala	Glu	225	230	235
Trp	Ala	Glu	Lys	Val	Asp	Gly	Asn	Val	Arg	Ile	Val	Gly	Cys	Ala	Val	245	250	255
Cys	Gly	Glu	Phe	Lys	Lys	Ala	Gln	Val	Gln	Glu	Gln	Leu	Ala	Arg	Lys	260	265	270
Ile	Glu	Trp	Leu	Pro	Ser	Ser	Ala	Gln	Ala	Leu	Gly	Ile	Arg	Asn	His	275	280	285
Tyr	Arg	His	Pro	Glu	Glu	His	Gly	Ser	Asp	Arg	Trp	Phe	Asn	Ala	Leu	290	295	300
Gly	Ser	Arg	Arg	Phe	Ser	Arg	Asn	Ala	Cys	Val	Val	Val	Ser	Cys	Gly	305	310	315
Thr	Ala	Val	Thr	Val	Asp	Ala	Leu	Thr	Asp	Asp	Gly	His	Tyr	Leu	Gly	325	330	335
Gly	Thr	Ile	Met	Pro	Gly	Phe	His	Leu	Met	Lys	Glu	Ser	Leu	Ala	Val	340	345	350
Arg	Thr	Ala	Asn	Leu	Asn	Arg	His	Ala	Gly	Lys	Arg	Tyr	Pro	Phe	Pro	355	360	365
Thr	Thr	Thr	Gly	Asn	Ala	Val	Ala	Ser	Gly	Met	Met	Asp	Ala	Val	Cys	370	375	380
Gly	Ser	Val	Met	Met	Met	His	Gly	Arg	Leu	Lys	Glu	Lys	Thr	Gly	Ala	385	390	395
Gly	Lys	Pro	Val	Asp	Val	Ile	Ile	Thr	Gly	Gly	Gly	Ala	Ala	Lys	Val	405	410	415

Ala Glu Ala Leu Pro Pro Ala Phe Leu Ala Glu Asn Thr Val Arg Val
420 425 430

Ala Asp Asn Leu Val Ile His Gly Leu Leu Asn Leu Ile Ala Ala Glu
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Gly Gly Glu Ser Glu His Thr
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<210> 1295

<211> 1779

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1295

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<210> 1296

<211> 592

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1296

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Lys	Pro	Gln	Gln	Leu	Asn	Gly	Phe	Trp	Gln	Gln	Met	Pro	Ala	His	Ile	35	40	45
Arg	Gly	Leu	Leu	Arg	Gln	His	Asp	Gly	Tyr	Trp	Arg	Leu	Val	Arg	Pro	50	55	60
Leu	Ala	Val	Phe	Asp	Ala	Glu	Gly	Leu	Arg	Asp	Leu	Gly	Glu	Arg	Ser	65	70	75
Gly	Phe	Gln	Thr	Ala	Leu	Lys	His	Glu	Cys	Ala	Ser	Ser	Asn	Asp	Glu	85	90	95
Ile	Leu	Glu	Leu	Ala	Arg	Ile	Ala	Pro	Asp	Lys	Ala	His	Lys	Thr	Ile	100	105	110
Cys	Val	Thr	His	Leu	Gln	Ser	Lys	Gly	Arg	Gly	Arg	Gln	Gly	Arg	Lys	115	120	125
Trp	Ser	His	Arg	Leu	Gly	Glu	Cys	Leu	Met	Phe	Ser	Phe	Gly	Trp	Ala	130	135	140
Phe	Asp	Arg	Pro	Gln	Tyr	Glu	Leu	Gly	Ser	Leu	Ser	Pro	Val	Ala	Ala	145	150	155
Leu	Ala	Cys	Arg	Arg	Ala	Leu	Gly	Cys	Leu	Gly	Leu	Glu	Thr	Gln	Ile	165	170	175
Lys	Trp	Pro	Asn	Asp	Leu	Val	Val	Gly	Arg	Asp	Lys	Leu	Gly	Gly	Ile	180	185	190
Leu	Ile	Glu	Thr	Val	Arg	Ala	Gly	Gly	Lys	Thr	Val	Ala	Val	Val	Gly	195	200	205
Ile	Gly	Ile	Asn	Phe	Val	Leu	Pro	Lys	Glu	Val	Glu	Asn	Ala	Ala	Ser	210	215	220
Val	Gln	Ser	Leu	Phe	Gln	Thr	Ala	Ser	Arg	Arg	Gly	Asn	Ala	Asp	Ala	225	230	235
Ala	Val	Leu	Leu	Glu	Thr	Leu	Leu	Ala	Glu	Leu	Gly	Ala	Val	Leu	Glu	245	250	255
Gln	Tyr	Ala	Glu	Glu	Gly	Phe	Ala	Pro	Phe	Leu	Asn	Glu	Tyr	Glu	Thr	260	265	270
Ala	Asn	Arg	Asp	His	Gly	Lys	Ala	Val	Leu	Leu	Leu	Arg	Asp	Gly	Glu	275	280	285
Thr	Val	Cys	Glu	Gly	Thr	Val	Lys	Gly	Val	Asp	Gly	Arg	Gly	Val	Leu	290	295	300
His	Leu	Glu	Thr	Ala	Glu	Gly	Glu	Gln	Thr	Val	Val	Ser	Gly	Glu	Ile	305	310	315

Ser Leu Arg Pro Asp Asn Arg Ser Val Ser Val Pro Lys Arg Pro Asp
 325 330 335
 Ser Glu Arg Phe Leu Leu Leu Glu Gly Gly Asn Ser Arg Leu Lys Trp
 340 345 350
 Ala Trp Val Glu Asn Gly Thr Phe Ala Thr Val Gly Ser Ala Pro Tyr
 355 360 365
 Arg Asp Leu Ser Pro Leu Gly Ala Glu Trp Ala Glu Lys Ala Asp Gly
 370 375 380
 Asn Val Arg Ile Val Gly Cys Ala Val Cys Gly Glu Ser Lys Lys Ala
 385 390 395 400
 Gln Val Lys Glu Gln Leu Ala Arg Lys Ile Glu Trp Leu Pro Ser Ser
 405 410 415
 Ala Gln Ala Leu Gly Ile Arg Asn His Tyr Arg His Pro Glu Glu His
 420 425 430
 Gly Ser Asp Arg Trp Phe Asn Ala Leu Gly Ser Arg Arg Phe Ser Arg
 435 440 445
 Asn Ala Cys Val Val Val Ser Cys Gly Thr Ala Val Thr Val Asp Ala
 450 455 460
 Leu Thr Asp Asp Gly His Tyr Leu Gly Gly Thr Ile Met Pro Gly Phe
 465 470 475 480
 His Leu Met Lys Glu Ser Leu Ala Val Arg Thr Ala Asn Leu Asn Arg
 485 490 495
 Pro Ala Gly Lys Arg Tyr Pro Phe Pro Thr Thr Thr Gly Asn Ala Val
 500 505 510
 Ala Ser Gly Met Met Asp Ala Val Cys Gly Ser Ile Met Met Met His
 515 520 525
 Gly Arg Leu Lys Glu Lys Asn Gly Ala Gly Lys Pro Val Asp Val Ile
 530 535 540
 Ile Thr Gly Gly Gly Ala Ala Lys Val Ala Glu Ala Leu Pro Pro Ala
 545 550 555 560
 Phe Leu Ala Glu Asn Thr Val Arg Val Ala Asp Asn Leu Val Ile His
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 Gly Leu Leu Asn Leu Ile Ala Ala Glu Gly Gly Glu Ser Glu His Ala
 580 585 590

<211> 1779
 <212> DNA
 <213> Neisseria meningitidis

<400> 1297
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 gcgcggattg cgccggacaa ggcgacacaa accatatgcg tgaccacact gcaaagtaag 360
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 tttgctggg tgtttgaccg gccgcagtat gagttgggtt cgctgtcgcc tgttgccgca 480
 gtggcgtgtc ggcgcgccct gtcgcgttta ggtttggatg tgcagattaa gtggcccaat 540
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 gccgtgctgc tggaaacgct gttggtgga ctggacgcgg tgttgttgca atatgcgcgg 780
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<210> 1298
 <211> 592
 <212> PRT
 <213> Neisseria meningitidis

<400> 1298
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 35 40 45
 Arg Gly Leu Leu Arg Gln His Asp Gly Tyr Trp Arg Leu Val Arg Pro
 50 55 60
 Leu Ala Val Phe Asp Ala Glu Gly Leu Arg Glu Leu Gly Glu Arg Ser

65		70		75		80
Gly Phe Gln Thr Ala Leu Lys His Glu Cys Ala Ser Ser Asn Asp Glu						
	85			90		95
Ile Leu Glu Leu Ala Arg Ile Ala Pro Asp Lys Ala His Lys Thr Ile						
	100		105		110	
Cys Val Thr His Leu Gln Ser Lys Gly Arg Gly Arg Gln Gly Arg Lys						
	115		120		125	
Trp Ser His Arg Leu Gly Glu Cys Leu Met Phe Ser Phe Gly Trp Val						
	130		135		140	
Phe Asp Arg Pro Gln Tyr Glu Leu Gly Ser Leu Ser Pro Val Ala Ala						
145		150		155		160
Val Ala Cys Arg Arg Ala Leu Ser Arg Leu Gly Leu Asp Val Gln Ile						
	165		170			175
Lys Trp Pro Asn Asp Leu Val Val Gly Arg Asp Lys Leu Gly Gly Ile						
	180		185			190
Leu Ile Glu Thr Val Arg Thr Gly Gly Lys Thr Val Ala Val Val Gly						
	195		200			205
Ile Gly Ile Asn Phe Val Leu Pro Lys Glu Val Glu Asn Ala Ala Ser						
210		215		220		
Val Gln Ser Leu Phe Gln Thr Ala Ser Arg Arg Gly Asn Ala Asp Ala						
225		230		235		240
Ala Val Leu Leu Glu Thr Leu Leu Val Glu Leu Asp Ala Val Leu Leu						
	245		250			255
Gln Tyr Ala Arg Asp Gly Phe Ala Pro Phe Val Ala Glu Tyr Gln Ala						
	260		265			270
Ala Asn Arg Asp His Gly Lys Ala Val Leu Leu Leu Arg Asp Gly Glu						
	275		280			285
Thr Val Phe Glu Gly Thr Val Lys Gly Val Asp Gly Gln Gly Val Leu						
	290		295		300	
His Leu Glu Thr Ala Glu Gly Lys Gln Thr Val Val Ser Gly Glu Ile						
305		310		315		320
Ser Leu Arg Ser Asp Asp Arg Pro Val Ser Val Pro Lys Arg Arg Asp						
	325		330			335
Ser Glu Arg Phe Leu Leu Leu Asp Gly Gly Asn Ser Arg Leu Lys Trp						
	340		345			350
Ala Trp Val Glu Asn Gly Thr Phe Ala Thr Val Gly Ser Ala Pro Tyr						
	355		360		365	
Arg Asp Leu Ser Pro Leu Gly Ala Glu Trp Ala Glu Lys Ala Asp Gly						

370		375		380
Asn Val Arg Ile Val Gly Cys Ala Val Cys Gly Glu Phe Lys Lys Ala				
385		390		395 400
Gln Val Gln Glu Gln Leu Ala Arg Lys Ile Glu Trp Leu Pro Ser Ser				
	405		410	415
Ala Gln Ala Leu Gly Ile Arg Asn His Tyr Arg His Pro Glu Glu His				
	420		425	430
Gly Ser Asp Arg Trp Phe Asn Ala Leu Gly Ser Arg Arg Phe Ser Arg				
	435		440	445
Asn Ala Cys Val Val Val Ser Cys Gly Thr Ala Val Thr Val Asp Ala				
	450		455	460
Leu Thr Asp Asp Gly His Tyr Leu Gly Gly Thr Ile Met Pro Gly Phe				
	465		470	475 480
His Leu Met Lys Glu Ser Leu Ala Val Arg Thr Ala Asn Leu Asn Arg				
	485		490	495
His Ala Gly Lys Arg Tyr Pro Phe Pro Thr Thr Thr Gly Asn Ala Val				
	500		505	510
Ala Ser Gly Met Met Asp Ala Val Cys Gly Ser Val Met Met Met His				
	515		520	525
Gly Arg Leu Lys Glu Lys Thr Gly Ala Gly Lys Pro Val Asp Val Ile				
	530		535	540
Ile Thr Gly Gly Gly Ala Ala Lys Val Ala Glu Ala Leu Pro Pro Ala				
	545		550	555 560
Phe Leu Ala Glu Asn Thr Val Arg Val Ala Asp Asn Leu Val Ile Tyr				
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Gly Leu Leu Asn Met Ile Ala Ala Glu Gly Arg Glu Tyr Glu His Ile				
	580		585	590

<210> 1299

<211> 1779

<212> DNA

<213> Neisseria meningitidis

<400> 1299

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gcgcggattg cgccggacaa ggcgcacaaa accatatgtg tgaccacact gcaaagtaag 360

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<210> 1300

<211> 592

<212> PRT

<213> Neisseria meningitidis

<400> 1300

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Asp Gly Leu Pro Gln His Val Ser Gln Leu Ala Arg Met Ala Asp Met
      20              25              30

Lys Pro Gln Gln Leu Asn Gly Phe Trp Gln Gln Met Pro Ala His Ile
      35              40              45

Arg Gly Leu Leu Arg Gln His Asp Gly Tyr Trp Arg Leu Val Arg Pro
      50              55              60

Leu Ala Val Phe Asp Ala Glu Gly Leu Arg Glu Leu Gly Glu Arg Ser
      65              70              75              80

Gly Phe Gln Thr Ala Leu Lys His Glu Cys Ala Ser Ser Asn Asp Glu
      85              90              95

Ile Leu Glu Leu Ala Arg Ile Ala Pro Asp Lys Ala His Lys Thr Ile
      100             105             110

Cys Val Thr His Leu Gln Ser Lys Gly Arg Gly Arg Gln Gly Arg Lys
      115             120             125

Trp Ser His Arg Leu Gly Glu Cys Leu Met Phe Ser Phe Gly Trp Val

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130	135	140
Phe Asp Arg Pro Gln Tyr Glu Leu Gly Ser Leu Ser Pro Val Ala Ala 145 150 155 160		
Val Ala Cys Arg Arg Ala Leu Ser Arg Leu Gly Leu Lys Thr Gln Ile 165 170 175		
Lys Trp Pro Asn Asp Leu Val Val Gly Arg Asp Lys Leu Gly Gly Ile 180 185 190		
Leu Ile Glu Thr Val Arg Thr Gly Gly Lys Thr Val Ala Val Val Gly 195 200 205		
Ile Gly Ile Asn Phe Val Leu Pro Lys Glu Val Glu Asn Ala Ala Ser 210 215 220		
Val Gln Ser Leu Phe Gln Thr Ala Ser Arg Arg Gly Asn Ala Asp Ala 225 230 235 240		
Ala Val Leu Leu Glu Thr Leu Leu Ala Glu Leu Asp Ala Val Leu Leu 245 250 255		
Gln Tyr Ala Arg Asp Gly Phe Ala Pro Phe Val Ala Glu Tyr Gln Ala 260 265 270		
Ala Asn Arg Asp His Gly Lys Ala Val Leu Leu Leu Arg Asp Gly Glu 275 280 285		
Thr Val Phe Glu Gly Thr Val Lys Gly Val Asp Gly Gln Gly Val Leu 290 295 300		
His Leu Glu Thr Ala Glu Gly Lys Gln Thr Val Val Ser Gly Glu Ile 305 310 315 320		
Ser Leu Arg Ser Asp Asp Arg Pro Val Ser Val Pro Lys Arg Arg Asp 325 330 335		
Ser Glu Arg Phe Leu Leu Leu Asp Gly Gly Asn Ser Arg Leu Lys Trp 340 345 350		
Ala Trp Val Glu Asn Gly Thr Phe Ala Thr Val Gly Ser Ala Pro Tyr 355 360 365		
Arg Asp Leu Ser Pro Leu Gly Ala Glu Trp Ala Glu Lys Val Asp Gly 370 375 380		
Asn Val Arg Ile Val Gly Cys Ala Val Cys Gly Glu Phe Lys Lys Ala 385 390 395 400		
Gln Val Gln Glu Gln Leu Ala Arg Lys Ile Glu Trp Leu Pro Ser Ser 405 410 415		
Ala Gln Ala Leu Gly Ile Arg Asn His Tyr Arg His Pro Glu Glu His 420 425 430		
Gly Ser Asp Arg Trp Phe Asn Ala Leu Gly Ser Arg Arg Phe Ser Arg		

435	440	445
Asn Ala Cys Val Val Val Ser Cys Gly Thr Ala Val Thr Val Asp Ala		
450	455	460
Leu Thr Asp Asp Gly His Tyr Leu Gly Gly Thr Ile Met Pro Gly Phe		
465	470	475
His Leu Met Lys Glu Ser Leu Ala Val Arg Thr Ala Asn Leu Asn Arg		
	485	490
His Ala Gly Lys Arg Tyr Pro Phe Pro Thr Thr Thr Gly Asn Ala Val		
	500	505
Ala Ser Gly Met Met Asp Ala Val Cys Gly Ser Val Met Met Met His		
	515	520
Gly Arg Leu Lys Glu Lys Thr Gly Ala Gly Lys Pro Val Asp Val Ile		
	530	535
Ile Thr Gly Gly Gly Ala Ala Lys Val Ala Glu Ala Leu Pro Pro Ala		
	545	550
Phe Leu Ala Glu Asn Thr Val Arg Val Ala Asp Asn Leu Val Ile His		
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Gly Leu Leu Asn Leu Ile Ala Ala Glu Gly Gly Glu Ser Glu His Thr		
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<210> 1301
 <211> 1356
 <212> DNA
 <213> Neisseria gonorrhoeae

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 ccgattgccc aaatcgcggc ggcgacccaa gccgacagtt atgtcagcgt ggcgcgagact 300
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<210> 1302

<211> 451

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1302

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Asp	Arg	Asn	Phe	Asp	Val	Arg	Thr	Ile	Thr	Ile	Gly	Ile	Asp	Leu	His	20	25	30	
Asp	Cys	Ile	Ser	Thr	Asp	Ile	Asp	Val	Leu	Asn	Gln	Asn	Ile	Tyr	Asn	35	40	45	
Lys	Ile	Thr	Thr	Val	Gly	Lys	Asp	Leu	Val	Ala	Thr	Ala	Lys	His	Leu	50	55	60	
Ser	Ala	Lys	Tyr	Gly	Val	Pro	Ile	Val	Asn	Gln	Arg	Ile	Ser	Val	Thr	65	70	75	80
Pro	Ile	Ala	Gln	Ile	Ala	Ala	Ala	Thr	Lys	Ala	Asp	Ser	Tyr	Val	Ser	85	90	95	
Val	Ala	Gln	Thr	Leu	Asp	Lys	Ala	Ala	Lys	Ala	Ile	Gly	Val	Ser	Phe	100	105	110	
Ile	Gly	Gly	Phe	Ser	Ala	Leu	Val	Gln	Lys	Gly	Met	Ser	Pro	Ser	Asp	115	120	125	
Glu	Val	Leu	Ile	Arg	Ser	Val	Pro	Glu	Ala	Met	Lys	Thr	Thr	Asp	Ile	130	135	140	
Val	Cys	Ser	Ser	Ile	Asn	Ile	Gly	Ser	Thr	Arg	Ala	Gly	Ile	Asn	Met	145	150	155	160
Asp	Ala	Val	Lys	Leu	Ala	Gly	Glu	Thr	Ile	Lys	Arg	Thr	Ala	Glu	Ile	165	170	175	
Thr	Pro	Glu	Gly	Phe	Gly	Cys	Ala	Lys	Ile	Val	Val	Phe	Cys	Asn	Ala	180	185	190	
Val	Glu	Asp	Asn	Pro	Phe	Met	Ala	Gly	Ala	Phe	His	Gly	Ser	Gly	Glu	195	200	205	
Ala	Asp	Ala	Val	Ile	Asn	Val	Gly	Val	Ser	Gly	Pro	Gly	Val	Val	Lys	210	215	220	
Ala	Ala	Leu	Glu	Asn	Ser	Asp	Ala	Val	Ser	Leu	Thr	Glu	Val	Ala	Glu				

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Val Val Lys Lys Thr Ala Phe Lys Ile Thr Arg Val Gly Glu Leu Ile						
		245		250		255
Gly Arg Glu Ala Ser Lys Met Leu Asn Ile Pro Phe Gly Ile Leu Asp						
		260		265		270
Leu Ser Leu Ala Pro Thr Pro Ala Val Gly Asp Ser Val Ala Arg Ile						
		275		280		285
Leu Glu Glu Met Gly Leu Ser Val Cys Gly Thr His Gly Thr Thr Ala						
		290		295		300
Ala Leu Ala Leu Leu Asn Asp Ala Val Lys Lys Gly Gly Met Met Ala						
305		310		315		320
Ser Ser Ala Val Gly Gly Leu Ser Gly Ala Phe Ile Pro Val Ser Glu						
		325		330		335
Asp Glu Gly Met Ile Ala Ala Ala Glu Ala Gly Val Leu Thr Leu Asp						
		340		345		350
Lys Leu Glu Ala Met Thr Ala Val Cys Ser Val Gly Leu Asp Met Ile						
		355		360		365
Ala Val Pro Gly Asp Thr Pro Ala His Thr Ile Ser Gly Ile Ile Ala						
		370		375		380
Asp Glu Ala Ala Ile Gly Met Ile Asn Ser Lys Thr Thr Ala Val Arg						
385		390		395		400
Ile Ile Pro Val Thr Gly Lys Thr Val Gly Asp Ser Val Glu Phe Gly						
		405		410		415
Gly Leu Leu Gly Tyr Ala Pro Val Met Pro Ala Lys Glu Gly Ser Cys						
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Glu Val Phe Val Asn Arg Gly Gly Arg Ile Pro Ala Pro Val Gln Ser						
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Met Lys Asn						
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<210> 1303
 <211> 1344
 <212> DNA
 <213> Neisseria meningitidis

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accggtaaaa ccgtcggcga cacggtcgag ttcggcggtg tggtgggcta cgcgcctgtg 1260
atgccggtca aagaagggtc gtgcgaagta ttcgtcaacc gaggcggcag aattccggct 1320
ccggttcaat cgatgaaaaa ctga 1344

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<210> 1304

<211> 447

<212> PRT

<213> *Neisseria meningitidis*

<400> 1304

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Met Ser Ile Gln Ser Gly Glu Ile Leu Glu Thr Val Lys Met Val Ala
  1              5              10             15

Asp Gln Asn Phe Asp Val Arg Thr Ile Thr Ile Gly Ile Asp Leu His
      20              25              30

Asp Cys Ile Ser Ser Asp Ile Asn Val Leu Asn Gln Asn Ile Tyr Asn
      35              40              45

Lys Ile Thr Thr Val Gly Lys Asp Leu Val Thr Thr Ala Lys Tyr Leu
      50              55              60

Ser Ala Lys Tyr Gly Val Pro Ile Val Asn Gln Arg Ile Ser Val Thr
      65              70              75              80

Pro Ile Ala Gln Ile Ala Ala Ala Thr His Ala Asp Ser Tyr Val Ser
      85              90              95

Val Ala Gln Thr Leu Asp Lys Ala Ala Lys Ala Ile Gly Val Ser Phe
      100             105             110

Ile Gly Gly Phe Ser Ala Leu Val Gln Lys Gly Met Ser Pro Ser Asp
      115             120             125

Glu Val Leu Ile Arg Ser Ile Pro Glu Ala Met Lys Thr Thr Asp Ile
      130             135             140

Val Cys Xaa Ser Ile Asn Ile Gly Ser Thr Arg Ala Gly Ile Asn Met
      145             150             155             160

Asp Ala Val Lys Leu Ala Gly Glu Thr Val Lys Arg Thr Ala Glu Ile
      165             170             175

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Thr Pro Glu Gly Phe Gly Cys Ala Lys Ile Val Val Phe Cys Asn Ala
 180 185 190
 Val Glu Asp Asn Pro Phe Xaa Ala Gly Ala Phe His Gly Ser Gly Asp
 195 200 205
 Ala Val Ile Asn Val Gly Val Ser Gly Pro Gly Val Val Lys Ala Ala
 210 215 220
 Leu Glu Asn Ser Asp Ala Thr Thr Leu Thr Glu Val Ala Glu Val Val
 225 230 235 240
 Lys Lys Thr Ala Phe Lys Ile Thr Arg Val Gly Glu Leu Ile Gly Arg
 245 250 255
 Glu Ala Ser Lys Met Leu Asn Ile Pro Phe Gly Ile Leu Asp Leu Ser
 260 265 270
 Pro Thr Pro Pro Val Gly Asp Ser Val Ala Arg Ile Leu Glu Glu Met
 275 280 285
 Gly Leu Ser Val Cys Gly Thr His Gly Thr Thr Ala Ala Leu Ala Leu
 290 295 300
 Leu Asn Asp Ala Val Lys Lys Gly Gly Met Met Ala Ser Ser Ala Val
 305 310 315 320
 Gly Gly Leu Ser Gly Ala Phe Ile Pro Val Ser Glu Asp Glu Gly Met
 325 330 335
 Ile Xaa Ala Ala Glu Ala Gly Val Leu Thr Leu Asp Lys Leu Glu Ala
 340 345 350
 Met Thr Ala Val Cys Ser Val Gly Leu Asp Met Ile Ala Val Pro Gly
 355 360 365
 Asp Thr Pro Ala His Thr Ile Ser Gly Ile Ile Ala Asp Glu Ala Ala
 370 375 380
 Ile Gly Met Ile Asn Ser Lys Thr Thr Ala Val Arg Ile Ile Pro Val
 385 390 395 400
 Thr Gly Lys Thr Val Gly Asp Thr Val Glu Phe Gly Gly Leu Leu Gly
 405 410 415
 Tyr Ala Pro Val Met Pro Val Lys Glu Gly Ser Cys Glu Val Phe Val
 420 425 430
 Asn Arg Gly Gly Arg Ile Pro Ala Pro Val Gln Ser Met Lys Asn
 435 440 445

<210> 1305

<211> 1356

<212> DNA

<213> Neisseria meningitidis

<400> 1305

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atgagtatcc aatccggcga aatttttagaa accgtcaaaa tggttgccga ccagaatttc 60
gatgtccgca ccattaccat cggcattgat ttgcacgact gcatcagcac cgacatcgac 120
gtgttgaacc aaaatattta caacaaaatt accacggtcg gcaaagactt ggtggcgaca 180
gcaaaatata tgtctgccaa atacggcgtg ccgattgtga atcagcgcac ttctgtcacg 240
ccgattgccc aaatcgcggc ggccacccat gctgattctt acgtcagcgt ggcgcaaact 300
ttggataagg ctgccaaagc catcggcgtg tcttttattg gcggcttttc cgcgctggtg 360
caaaaaggta tgtcgccttc tgacgaggtg ttaatccgtt ccattcccga agcgatgaag 420
actactgata tcgtgtgcag ctccatcaat atcggcagta cgcgcgccgg tatcaatatg 480
gacgcggtca gactggcggg cgaaaccatc aaacgcacgg ctgaaatcac actagaaggt 540
ttcggctgcg ccaaaatcgt cgtgttctgc aacgcggtgg aagacaaccc gtttatggcg 600
ggcgcgtttc acggctcagg cgaagcggat gctgtgatta atgtcggcgt atccggcccg 660
ggtgtcgtaa aagccgcgtt ggaaaattcg gatgcaacga cattgaccga agttgccgaa 720
gttgtgaaga aaaccgcctt caaaattacc cgcgtgggcg aactcatcgg ccgcgaagcc 780
tcaaaaatgc tgaatatccc gtttggtatt ctcgacttgt cgctggcacc gaccctgcc 840
gtcggcgact cggtggcgcg cattcttgaa gaaatgggtt tgagcgtctg cgttacgcac 900
ggcacaacag cagctttggc attgctgaac gatgccgtga aaaagggcgg catgatggct 960
tcgagcgcgg ttggcggttt gagtggcgcg tttatccccg tttccgaaga cgaaggatg 1020
attgccgccg ccgaagcagg cgtgctgacg ttggataaac tcgaagcgat gaccgccgtt 1080
tgttcggtcg gcttgatat gattgccgtt cccggcgaca caccgcgcga caccatttcc 1140
ggcatcattg ccgacgaagc cgccatcggc atgatcaaca gcaaaaccac tgccgtgcgc 1200
attattccgg taaccggtaa aaccgtcggc gacagcgtcg agttcggcgg cctgttgggc 1260
tacgcgcctg taatgccggt aaaagaaggc tcatgcgaag tgttcgtcaa ccggggcgcg 1320
aggattcccg caccggttca atcgatgaaa aactga 1356
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<210> 1306

<211> 451

<212> PRT

<213> *Neisseria meningitidis*

<400> 1306

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Met Ser Ile Gln Ser Gly Glu Ile Leu Glu Thr Val Lys Met Val Ala
  1              5              10              15

Asp Gln Asn Phe Asp Val Arg Thr Ile Thr Ile Gly Ile Asp Leu His
      20              25              30

Asp Cys Ile Ser Thr Asp Ile Asp Val Leu Asn Gln Asn Ile Tyr Asn
      35              40              45

Lys Ile Thr Thr Val Gly Lys Asp Leu Val Ala Thr Ala Lys Tyr Leu
      50              55              60

Ser Ala Lys Tyr Gly Val Pro Ile Val Asn Gln Arg Ile Ser Val Thr
      65              70              75              80

Pro Ile Ala Gln Ile Ala Ala Ala Thr His Ala Asp Ser Tyr Val Ser
      85              90              95

Val Ala Gln Thr Leu Asp Lys Ala Ala Lys Ala Ile Gly Val Ser Phe
      100             105             110

Ile Gly Gly Phe Ser Ala Leu Val Gln Lys Gly Met Ser Pro Ser Asp
      115             120             125
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Glu	Val	Leu	Ile	Arg	Ser	Ile	Pro	Glu	Ala	Met	Lys	Thr	Thr	Asp	Ile		
130						135					140						
Val	Cys	Ser	Ser	Ile	Asn	Ile	Gly	Ser	Thr	Arg	Ala	Gly	Ile	Asn	Met		
145					150					155					160		
Asp	Ala	Val	Arg	Leu	Ala	Gly	Glu	Thr	Ile	Lys	Arg	Thr	Ala	Glu	Ile		
				165					170					175			
Thr	Leu	Glu	Gly	Phe	Gly	Cys	Ala	Lys	Ile	Val	Val	Phe	Cys	Asn	Ala		
			180					185					190				
Val	Glu	Asp	Asn	Pro	Phe	Met	Ala	Gly	Ala	Phe	His	Gly	Ser	Gly	Glu		
		195					200					205					
Ala	Asp	Ala	Val	Ile	Asn	Val	Gly	Val	Ser	Gly	Pro	Gly	Val	Val	Lys		
	210					215					220						
Ala	Ala	Leu	Glu	Asn	Ser	Asp	Ala	Thr	Thr	Leu	Thr	Glu	Val	Ala	Glu		
225					230					235					240		
Val	Val	Lys	Lys	Thr	Ala	Phe	Lys	Ile	Thr	Arg	Val	Gly	Glu	Leu	Ile		
				245					250					255			
Gly	Arg	Glu	Ala	Ser	Lys	Met	Leu	Asn	Ile	Pro	Phe	Gly	Ile	Leu	Asp		
			260					265					270				
Leu	Ser	Leu	Ala	Pro	Thr	Pro	Ala	Val	Gly	Asp	Ser	Val	Ala	Arg	Ile		
	275						280					285					
Leu	Glu	Glu	Met	Gly	Leu	Ser	Val	Cys	Gly	Thr	His	Gly	Thr	Thr	Ala		
	290					295					300						
Ala	Leu	Ala	Leu	Leu	Asn	Asp	Ala	Val	Lys	Lys	Gly	Gly	Met	Met	Ala		
305					310					315					320		
Ser	Ser	Ala	Val	Gly	Gly	Leu	Ser	Gly	Ala	Phe	Ile	Pro	Val	Ser	Glu		
				325					330					335			
Asp	Glu	Gly	Met	Ile	Ala	Ala	Ala	Glu	Ala	Gly	Val	Leu	Thr	Leu	Asp		
			340					345					350				
Lys	Leu	Glu	Ala	Met	Thr	Ala	Val	Cys	Ser	Val	Gly	Leu	Asp	Met	Ile		
	355						360					365					
Ala	Val	Pro	Gly	Asp	Thr	Pro	Ala	His	Thr	Ile	Ser	Gly	Ile	Ile	Ala		
	370					375					380						
Asp	Glu	Ala	Ala	Ile	Gly	Met	Ile	Asn	Ser	Lys	Thr	Thr	Ala	Val	Arg		
385					390					395					400		
Ile	Ile	Pro	Val	Thr	Gly	Lys	Thr	Val	Gly	Asp	Ser	Val	Glu	Phe	Gly		
				405					410					415			
Gly	Leu	Leu	Gly	Tyr	Ala	Pro	Val	Met	Pro	Val	Lys	Glu	Gly	Ser	Cys		
			420					425					430				

Glu Val Phe Val Asn Arg Gly Gly Arg Ile Pro Ala Pro Val Gln Ser
 435 440 445

Met Lys Asn
 450

<210> 1307
 <211> 522
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1307
 atggacgacc cgcgcaccta cggatcgggc aatcccggcg cgaccaatgt tttacgcagc 60
 ggcaaaaaaa aggcggccgc gctgacgctc ttgggcgatg ccgccaaagg tttggttgcc 120
 gttttgcttg cacgcgtgct tcaagaaccg ctcggtttat ccgacagcgc aatcgccgcc 180
 gtcgcactcg ccgcgctggt cgggcatatg tggccggtgt ttttcggatt taagggcggc 240
 aaaggcggtg caacggcatt gggcgtgctt ctggcactct ctctgcaac tgccttggtc 300
 tgccgcgttg tttggcttgt gatggcattc ggcttcaaag tatcctccct tgccgcgctg 360
 gtcgccacaa ccgccgcgcc ccttgccgca ctgtttttta tgccgcatac ttcttgatt 420
 ttgcgaaccc tcgcaatcgc catattggtg ttgctccgcc ataagagcaa catcctcaac 480
 ctgattaag gcaaaagaag caaatcggc gaaaaacgct ga 522

<210> 1308
 <211> 173
 <212> PRT
 <213> Neisseria meningitidis

<400> 1308
 Met Asp Asp Pro Arg Thr Tyr Gly Ser Gly Asn Pro Gly Ala Thr Asn
 1 5 10 15
 Val Leu Arg Ser Gly Lys Lys Lys Ala Ala Ala Leu Thr Leu Leu Gly
 20 25 30
 Asp Ala Ala Lys Gly Leu Val Ala Val Leu Leu Ala Arg Val Leu Gln
 35 40 45
 Glu Pro Leu Gly Leu Ser Asp Ser Ala Ile Ala Ala Val Ala Leu Ala
 50 55 60
 Ala Leu Val Gly His Met Trp Pro Val Phe Phe Gly Phe Lys Gly Gly
 65 70 75 80
 Lys Gly Val Ala Thr Ala Leu Gly Val Leu Leu Ala Leu Ser Pro Ala
 85 90 95
 Thr Ala Leu Val Cys Ala Leu Ile Trp Leu Val Met Ala Phe Gly Phe
 100 105 110
 Lys Val Ser Ser Leu Ala Ala Leu Val Ala Thr Thr Ala Ala Pro Leu
 115 120 125
 Ala Ala Leu Phe Phe Met Pro His Thr Ser Trp Ile Phe Ala Thr Leu
 130 135 140

Ala Ile Ala Ile Leu Val Leu Leu Arg His Lys Ser Asn Ile Leu Asn
 145 150 155 160

Leu Ile Lys Gly Lys Glu Ser Lys Ile Gly Glu Lys Arg
 165 170

<210> 1309

<211> 522

<212> DNA

<213> *Neisseria meningitidis*

<400> 1309

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ggcaaaaaaa aggcggccgc gctgacgctc ttgggcgatg ccgccaaagg tttagttgcc 120
gttttgcttg cacgcgtgct tcaagaaccg ctcggtttat ccgacagcgc aatcgcggcc 180
gtcgcactcg ccgcgctggt cgggcatatg tggccggtgt ttttcggatt taaaggcggc 240
aaaggcgtgg caacggcatt gggcgtgctt ctggcactct ctcccgcaac tgccttggtc 300
tgcgcgttga tttggcttgt tatggcattc ggcttcaagg tgctctccct tgccgcatta 360
accgccacaa tcgccgcacc ggtcgcgcga tccttcttta tgccgcacgt ctcggtgggtt 420
tgggcgaccg tcgccattgc tttgctggtg ttgttccgcc acaaaagtaa tatcgtcaag 480
ctgctcgaag gcagagaaag caaatcggc ggcagccgct ga 522
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<210> 1310

<211> 173

<212> PRT

<213> *Neisseria meningitidis*

<400> 1310

Met Asp Asp Pro Arg Thr Tyr Gly Ser Gly Asn Pro Gly Ala Thr Asn
 1 5 10 15

Val Leu Arg Ser Gly Lys Lys Lys Ala Ala Ala Leu Thr Leu Leu Gly
 20 25 30

Asp Ala Ala Lys Gly Leu Val Ala Val Leu Leu Ala Arg Val Leu Gln
 35 40 45

Glu Pro Leu Gly Leu Ser Asp Ser Ala Ile Ala Ala Val Ala Leu Ala
 50 55 60

Ala Leu Val Gly His Met Trp Pro Val Phe Phe Gly Phe Lys Gly Gly
 65 70 75 80

Lys Gly Val Ala Thr Ala Leu Gly Val Leu Leu Ala Leu Ser Pro Ala
 85 90 95

Thr Ala Leu Val Cys Ala Leu Ile Trp Leu Val Met Ala Phe Gly Phe
 100 105 110

Lys Val Ser Ser Leu Ala Ala Leu Thr Ala Thr Ile Ala Ala Pro Val
 115 120 125

Ala Ala Ser Phe Phe Met Pro His Val Ser Trp Val Trp Ala Thr Val
 130 135 140

Ala Ile Ala Leu Leu Val Leu Phe Arg His Lys Ser Asn Ile Val Lys
 145 150 155 160

Leu Leu Glu Gly Arg Glu Ser Lys Ile Gly Gly Ser Arg
 165 170

<210> 1311

<211> 522

<212> DNA

<213> Neisseria meningitidis

<400> 1311

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atggacgacc cgcgcaccta cggatcgggc aatccggggg caaccaatgt tttacgcagc 60
ggcaaaaaaa aggcggccgc gctgacgctc ttgggcgatg ccgccaaagg tttggttgcc 120
gttttgcttg cagcgtgct tcaagaaccg ctcggtttat ccgacagcgc aatcgcggcc 180
gtcgactcg ccgcgtggt cgggcatatg tggccggtgt ttttcggatt taaaggcggc 240
aaaggcgtgg caacggcatt gggcgtgctt ctggcactct ctcccacaac tgccttggtc 300
tgcgcgttga tttggcttgt gatggcattc ggcttcaagg tgctctccct tgccgcatta 360
accgccacaa tcgcgcgccc ccttgccgca ctgtttttta tgccgcatac ttcttggtatt 420
ttcgcaaccc tcgcaatcgc catattggtg ttgctccgcc ataagagcaa catcctcaac 480
ctgattaaag gcaaagaaag caaatcggc gaaaaacgct ga 522
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<210> 1312

<211> 173

<212> PRT

<213> Neisseria meningitidis

<400> 1312

Met Asp Asp Pro Arg Thr Tyr Gly Ser Gly Asn Pro Gly Ala Thr Asn
 1 5 10 15

Val Leu Arg Ser Gly Lys Lys Lys Ala Ala Ala Leu Thr Leu Leu Gly
 20 25 30

Asp Ala Ala Lys Gly Leu Val Ala Val Leu Leu Ala Arg Val Leu Gln
 35 40 45

Glu Pro Leu Gly Leu Ser Asp Ser Ala Ile Ala Ala Val Ala Leu Ala
 50 55 60

Ala Leu Val Gly His Met Trp Pro Val Phe Phe Gly Phe Lys Gly Gly
 65 70 75 80

Lys Gly Val Ala Thr Ala Leu Gly Val Leu Leu Ala Leu Ser Pro Thr
 85 90 95

Thr Ala Leu Val Cys Ala Leu Ile Trp Leu Val Met Ala Phe Gly Phe
 100 105 110

Lys Val Ser Ser Leu Ala Ala Leu Thr Ala Thr Ile Ala Ala Pro Leu
 115 120 125

Ala Ala Leu Phe Phe Met Pro His Thr Ser Trp Ile Phe Ala Thr Leu

130

135

140

Ala Ile Ala Ile Leu Val Leu Leu Arg His Lys Ser Asn Ile Leu Asn
 145 150 155 160

Leu Ile Lys Gly Lys Glu Ser Lys Ile Gly Glu Lys Arg
 165 170

<210> 1313

<211> 612

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1313

atgaaattac aacaattggc tgaagaaaaa atcggcggttc tgattgtgtt cacgctgctt 60
 gtagtcagtg tcggtctgtt gattgaagtt gtgcccttgg cctttaccaa ggcggcaaca 120
 cagccggcgc cgggcgtgaa gccttacaat gccctgcagg ttgccggacg cgatatttac 180
 atccgtgagg gctgttacaa ctgccactct caaatgattc gtccgttccg tgcggaaacc 240
 gagcgttacg gtcattactc tgttgccgga gagtcgggtt acgaccatcc gttccaatgg 300
 ggttccaaac gtaccgggtcc tgatttggca cgtgtgggcg gccgctattc cgacgaatgg 360
 caccgcatcc acctgctgaa tcccctgat gtcgtgcctg agtccaatat gccggcattc 420
 ccgtggcttg cacgcaataa agtcgatgtc gatgcaaccg ttgccaacat gaaggctttg 480
 cgtaaagtag gtactcctta cagtgatgag gaaattgcga aagcgcctga ggctttggca 540
 aacaaatccg agctggatgc tgtagtcgcc tatctgcaag gattgggtct ggctttgaaa 600
 aacgtaaggt aa 612

<210> 1314

<211> 203

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1314

Met Lys Leu Gln Gln Leu Ala Glu Glu Lys Ile Gly Val Leu Ile Val
 1 5 10 15
 Phe Thr Leu Leu Val Val Ser Val Gly Leu Leu Ile Glu Val Val Pro
 20 25 30
 Leu Ala Phe Thr Lys Ala Ala Thr Gln Pro Ala Pro Gly Val Lys Pro
 35 40 45
 Tyr Asn Ala Leu Gln Val Ala Gly Arg Asp Ile Tyr Ile Arg Glu Gly
 50 55 60
 Cys Tyr Asn Cys His Ser Gln Met Ile Arg Pro Phe Arg Ala Glu Thr
 65 70 75 80
 Glu Arg Tyr Gly His Tyr Ser Val Ala Gly Glu Ser Val Tyr Asp His
 85 90 95
 Pro Phe Gln Trp Gly Ser Lys Arg Thr Gly Pro Asp Leu Ala Arg Val
 100 105 110
 Gly Gly Arg Tyr Ser Asp Glu Trp His Arg Ile His Leu Leu Asn Pro
 115 120 125

Arg Asp Val Val Pro Glu Ser Asn Met Pro Ala Phe Pro Trp Leu Ala
 130 135 140

Arg Asn Lys Val Asp Val Asp Ala Thr Val Ala Asn Met Lys Ala Leu
 145 150 155 160

Arg Lys Val Gly Thr Pro Tyr Ser Asp Glu Glu Ile Ala Lys Ala Pro
 165 170 175

Glu Ala Leu Ala Asn Lys Ser Glu Leu Asp Ala Val Val Ala Tyr Leu
 180 185 190

Gln Gly Leu Gly Leu Ala Leu Lys Asn Val Arg
 195 200

<210> 1315

<211> 612

<212> DNA

<213> Neisseria meningitidis

<400> 1315

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 gtagtcagtg tcggtctgtt gattgaagtt gtgcccttgg cctttaccaa ggcggcaaca 120
 cagccggcgc cgggcgtgaa gccttacaat gccctgcagg ttgccggacg cgatatttac 180
 atccgtgagg gctgttaca ctgccactcg caaatgattc gtccgttccg tgcggaaacc 240
 gagcgttacg gtcattactc tgttgccgga gagtcgggtt acgaccatcc gttccaatgg 300
 gggtccaaac gtaccggtcc tgatttggca cgtgtgggcg gtcgctattc cgacgaatgg 360
 caccgtatcc acctgctgaa tccccgtgat gtcgtgcctg agtccaatat gccggcattc 420
 ccgtggcttg cacgcaataa agtcgatgtc gatgcaaccg ttgccaacat gaaggctttg 480
 cgtaaagtag gtactcctta cagtgatgag gaaattgcga aagcacctga ggctttggca 540
 aacaaatccg agctggatgc tgtagtcgcc tatctgcaag gattgggtct ggctttgaaa 600
 aacgtaaggt aa 612

<210> 1316

<211> 203

<212> PRT

<213> Neisseria meningitidis.

<400> 1316

Met Lys Leu Gln Gln Leu Ala Glu Glu Lys Ile Gly Val Leu Ile Val
 1 5 10 15

Phe Thr Leu Leu Val Val Ser Val Gly Leu Leu Ile Glu Val Val Pro
 20 25 30

Leu Ala Phe Thr Lys Ala Ala Thr Gln Pro Ala Pro Gly Val Lys Pro
 35 40 45

Tyr Asn Ala Leu Gln Val Ala Gly Arg Asp Ile Tyr Ile Arg Glu Gly
 50 55 60

Cys Tyr Asn Cys His Ser Gln Met Ile Arg Pro Phe Arg Ala Glu Thr
 65 70 75 80

Glu Arg Tyr Gly His Tyr Ser Val Ala Gly Glu Ser Val Tyr Asp His
 85 90 95
 Pro Phe Gln Trp Gly Ser Lys Arg Thr Gly Pro Asp Leu Ala Arg Val
 100 105 110
 Gly Gly Arg Tyr Ser Asp Glu Trp His Arg Ile His Leu Leu Asn Pro
 115 120 125
 Arg Asp Val Val Pro Glu Ser Asn Met Pro Ala Phe Pro Trp Leu Ala
 130 135 140
 Arg Asn Lys Val Asp Val Asp Ala Thr Val Ala Asn Met Lys Ala Leu
 145 150 155 160
 Arg Lys Val Gly Thr Pro Tyr Ser Asp Glu Glu Ile Ala Lys Ala Pro
 165 170 175
 Glu Ala Leu Ala Asn Lys Ser Glu Leu Asp Ala Val Val Ala Tyr Leu
 180 185 190
 Gln Gly Leu Gly Leu Ala Leu Lys Asn Val Arg
 195 200

<210> 1317
 <211> 612
 <212> DNA
 <213> Neisseria meningitidis

<400> 1317
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 cagccggcgt cgggcgtgaa gccttacaat gccctgcagg ttgccggacg cgatatattac 180
 atccgtgagg gctgttacaa ctgccactcg caaatgattc gtccgttccg tgcggaaacc 240
 gagcggttac gtcattactc tgttgccgga gagtcggttt acgaccatcc gttccaatgg 300
 ggttccaaac gtaccgggcc tgatttggca cgtgtgggcg gtcgctattc cgacgaatgg 360
 caccgtatcc acctgctgaa tccccgtgat gtcgtgcctg agtccaatat gccggcattc 420
 ccgtggcttg cagcgaataa agtcgatgtc gatgcaaccg ttgcccaacat gaaggctttg 480
 cgtaaagtag gtactcctta cagtgatgag gaaattgcga aagcgcctga ggctttggca 540
 aacaaatccg agctggatgc tgtagtcgcc tatctgcaag gattgggtct ggctttgaaa 600
 aacgtaagggt aa 612

<210> 1318
 <211> 203
 <212> PRT
 <213> Neisseria meningitidis

<400> 1318
 Met Lys Leu Gln Gln Leu Ala Glu Glu Lys Ile Gly Val Leu Ile Val
 1 5 10 15
 Phe Thr Leu Leu Val Val Ser Val Gly Leu Leu Ile Glu Val Val Pro
 20 25 30
 Leu Ala Phe Thr Lys Ala Ala Thr Gln Pro Ala Ser Gly Val Lys Pro

35	40	45
Tyr Asn Ala Leu Gln Val Ala Gly Arg Asp Ile Tyr Ile Arg Glu Gly		
50	55	60
Cys Tyr Asn Cys His Ser Gln Met Ile Arg Pro Phe Arg Ala Glu Thr		
65	70	75
Glu Arg Tyr Gly His Tyr Ser Val Ala Gly Glu Ser Val Tyr Asp His		
85	90	95
Pro Phe Gln Trp Gly Ser Lys Arg Thr Gly Pro Asp Leu Ala Arg Val		
100	105	110
Gly Gly Arg Tyr Ser Asp Glu Trp His Arg Ile His Leu Leu Asn Pro		
115	120	125
Arg Asp Val Val Pro Glu Ser Asn Met Pro Ala Phe Pro Trp Leu Ala		
130	135	140
Arg Asn Lys Val Asp Val Asp Ala Thr Val Ala Asn Met Lys Ala Leu		
145	150	155
Arg Lys Val Gly Thr Pro Tyr Ser Asp Glu Glu Ile Ala Lys Ala Pro		
165	170	175
Glu Ala Leu Ala Asn Lys Ser Glu Leu Asp Ala Val Val Ala Tyr Leu		
180	185	190
Gln Gly Leu Gly Leu Ala Leu Lys Asn Val Arg		
195	200	

<210> 1319

<211> 1494

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1319

atggatatgg	tgaacactaa	accgaataact	agtggtgatta	atatgctttc	tttccttacc	60
ggattattga	gcttgggtat	agaagtcttg	tgggtaagga	tggttttcgtt	cgcagcacag	120
tccgtgcctc	aggcattttc	atattattctt	gcctgttttc	tgaccgggat	cgcgcgcggc	180
gcgtattttg	gcaaacggat	ttgccgcagc	cgctttgttg	atattccctt	tatcgggcag	240
tgcttcttgt	ggcggggtat	tgccgatttt	ttgattttgg	gtgctgcgtg	gttggtgacg	300
ggtttttccg	gtttcgtcca	ccacgccggg	attttcatta	ccctgtctgc	cgtcgtcagg	360
gggttgattt	tcccacttgt	acaccatgtg	ggtagcgatg	gcaacaaatc	cggacgacag	420
gtttccaatg	tttatttcgc	caacgttgcc	ggcagtgcac	tgggtccggg	ccttatcggc	480
tttgtgatac	ttgatttggt	gtccacccaa	cagattttacc	tgctcatctg	tttgatttct	540
gctgctgtcc	ctttgttttg	tacactgttc	caaaaaagtc	tccgactgaa	tgacgtgtcg	600
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<210> 1320

<211> 497

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1320

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			20					25					30		
Arg	Met	Phe	Ser	Phe	Ala	Ala	Gln	Ser	Val	Pro	Gln	Ala	Phe	Ser	Phe
		35					40					45			
Ile	Leu	Ala	Cys	Phe	Leu	Thr	Gly	Ile	Ala	Val	Gly	Ala	Tyr	Phe	Gly
	50					55					60				
Lys	Arg	Ile	Cys	Arg	Ser	Arg	Phe	Val	Asp	Ile	Pro	Phe	Ile	Gly	Gln
	65				70					75					80
Cys	Phe	Leu	Trp	Ala	Gly	Ile	Ala	Asp	Phe	Leu	Ile	Leu	Gly	Ala	Ala
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Trp	Leu	Leu	Thr	Gly	Phe	Ser	Gly	Phe	Val	His	His	Ala	Gly	Ile	Phe
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His	Val	Gly	Thr	Asp	Gly	Asn	Lys	Ser	Gly	Arg	Gln	Val	Ser	Asn	Val
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Tyr	Phe	Ala	Asn	Val	Ala	Gly	Ser	Ala	Leu	Gly	Pro	Val	Leu	Ile	Gly
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Phe	Val	Ile	Leu	Asp	Leu	Leu	Ser	Thr	Gln	Gln	Ile	Tyr	Leu	Leu	Ile
			165						170					175	
Cys	Leu	Ile	Ser	Ala	Ala	Val	Pro	Leu	Phe	Cys	Thr	Leu	Phe	Gln	Lys
			180					185					190		
Ser	Leu	Arg	Leu	Asn	Ala	Val	Ser	Val	Ala	Val	Ser	Leu	Met	Phe	Gly
		195					200					205			
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	210					215					220				

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Ala	Tyr	Asn	Thr	Asp	Ile	Phe	Asn	Ser	Val	Asn	Gly	Ile	Glu	Arg	Ala	260	265	270	
Tyr	Leu	Leu	Pro	Ser	Leu	Lys	Ser	Gly	Ile	Arg	Arg	Ile	Phe	Val	Val	275	280	285	
Gly	Leu	Ser	Thr	Gly	Ser	Trp	Ala	Arg	Val	Leu	Ser	Ala	Ile	Pro	Glu	290	295	300	
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Ile	Ala	Asp	Glu	Pro	Gln	Ile	Ala	Pro	Leu	Leu	Gln	Asp	Lys	Arg	Val	325	330	335	
Glu	Ile	Val	Leu	Asp	Asp	Gly	Arg	Lys	Trp	Leu	Arg	Arg	His	Pro	Asp	340	345	350	
Glu	Lys	Phe	Asp	Leu	Ile	Leu	Met	Asn	Ser	Thr	Trp	Tyr	Trp	Arg	Ala	355	360	365	
Tyr	Ser	Thr	Asn	Leu	Leu	Ser	Ala	Glu	Phe	Leu	Lys	Gln	Val	Gln	Ser	370	375	380	
His	Leu	Thr	Pro	Asp	Gly	Ile	Val	Met	Phe	Asn	Thr	Thr	His	Ser	Pro	385	390	395	400
His	Ala	Phe	Ala	Thr	Ala	Val	His	Ser	Ile	Pro	Tyr	Ala	Tyr	Arg	Tyr	405	410	415	
Gly	His	Met	Val	Val	Gly	Ser	Ala	Thr	Pro	Val	Val	Phe	Pro	Asn	Lys	420	425	430	
Glu	Leu	Leu	Lys	Gln	Arg	Leu	Ser	Arg	Leu	Ile	Trp	Pro	Glu	Ser	Gly	435	440	445	
Arg	His	Val	Phe	Asp	Ser	Ser	Thr	Val	Asp	Ala	Ala	Ala	Gln	Lys	Val	450	455	460	
Val	Ser	Arg	Met	Leu	Ile	Arg	Met	Thr	Glu	Pro	Ser	Ala	Gly	Ala	Glu	465	470	475	480
Val	Ile	Thr	Asp	Asp	Asn	Met	Ile	Val	Glu	Tyr	Lys	Tyr	Gly	Arg	Gly	485	490	495	
Ile																			

<211> 1494
 <212> DNA
 <213> *Neisseria meningitidis*

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 ggtttttccg gcttcgtcca ccacgccggt atcttcatta ccctgtctgc cgtcgtcasa 360
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 aatattgctg accgtccgga taggctgatt gaaaacaaac acggcattgt tgcggtttac 720
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<210> 1322
 <211> 497
 <212> PRT
 <213> *Neisseria meningitidis*

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 35 40 45
 Thr Leu Ala Cys Phe Leu Thr Gly Ile Ala Val Gly Ala Tyr Phe Gly
 50 55 60
 Lys Arg Ile Cys Arg Ser Arg Phe Val Asp Ile Pro Phe Ile Gly Gln
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 85 90 95
 Trp Leu Leu Thr Gly Phe Ser Gly Phe Val His His Ala Gly Ile Phe

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Ile	Thr	Leu	Ser	Ala	Val	Val	Xaa	Xaa	Leu	Ile	Phe	Pro	Leu	Val	His
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His	Val	Gly	Thr	Asp	Gly	Asn	Lys	Ser	Gly	Arg	Gln	Val	Ser	Asn	Val
		130					135					140			
Tyr	Phe	Ala	Xaa	Val	Ala	Gly	Ser	Ala	Leu	Gly	Pro	Val	Leu	Ile	Gly
		145					150					155			
Phe	Val	Ile	Leu	Asp	Phe	Leu	Ser	Thr	Gln	Gln	Ile	Tyr	Leu	Leu	Ile
				165					170					175	
Cys	Xaa	Ile	Ser	Ala	Ala	Val	Pro	Leu	Phe	Cys	Thr	Leu	Phe	Gln	Lys
				180					185					190	
Ser	Leu	Arg	Leu	Asn	Ala	Val	Ser	Val	Ala	Val	Ser	Leu	Met	Phe	Gly
				195					200					205	
Ile	Leu	Met	Phe	Leu	Leu	Pro	Asp	Ser	Val	Phe	Gln	Asn	Ile	Ala	Asp
				210					215					220	
Arg	Pro	Asp	Arg	Leu	Ile	Glu	Asn	Lys	His	Gly	Ile	Val	Ala	Val	Tyr
				225					230					235	
His	Arg	Asp	Gly	Asp	Lys	Val	Val	Tyr	Gly	Ala	Asn	Val	Tyr	Asp	Gly
				245					250					255	
Ala	Tyr	Asn	Thr	Asp	Val	Phe	Asn	Ser	Val	Asn	Gly	Ile	Glu	Arg	Ala
				260					265					270	
Tyr	Leu	Leu	Pro	Ser	Leu	Lys	Ser	Gly	Ile	Arg	Arg	Ile	Phe	Val	Val
				275					280					285	
Gly	Leu	Ser	Thr	Gly	Ser	Trp	Ala	Arg	Val	Leu	Ser	Ala	Ile	Pro	Glu
				290					295					300	
Met	Gln	Ser	Met	Ile	Val	Ala	Glu	Ile	Asn	Pro	Ala	Tyr	Arg	Ser	Leu
				305					310					315	
Ile	Ala	Asp	Glu	Pro	Gln	Ile	Ala	Pro	Leu	Leu	Gln	Asp	Lys	Arg	Val
				325					330					335	
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Glu	Lys	Phe	Asp	Leu	Ile	Leu	Met	Asn	Thr	Thr	Trp	Tyr	Trp	Arg	Ala
				355					360					365	
Tyr	Ser	Thr	Asn	Leu	Leu	Ser	Ala	Glu	Phe	Leu	Lys	Gln	Val	Gln	Ser
				370					375					380	
His	Leu	Thr	Pro	Asp	Gly	Ile	Val	Met	Phe	Asn	Thr	Thr	His	Ser	Pro
				385					390					395	
His	Ala	Phe	Ala	Thr	Ala	Val	His	Ser	Ile	Pro	Tyr	Ala	Tyr	Arg	Tyr

405	410	415
Gly His Met Val Val Gly Ser Ala Thr Pro Val Val Phe Pro Asn Lys		
420	425	430
Glu Leu Leu Lys Gln Arg Leu Ser Arg Leu Ile Trp Pro Glu Ser Gly		
435	440	445
Arg His Val Phe Asp Ser Ser Thr Val Asp Ala Ala Ala Gln Lys Val		
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Val Ser Arg Met Leu Ile Gln Met Thr Glu Pro Ser Ala Gly Ala Glu		
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Val Ile Thr Asp Asp Asn Met Ile Val Glu Tyr Lys Tyr Gly Arg Gly		
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Ile

<210> 1323
 <211> 1494
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 1323

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<210> 1324

<211> 497
<212> PRT
<213> Neisseria meningitidis

<400> 1324

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			20					25					30		
Arg	Met	Phe	Ser	Phe	Ala	Ala	Gln	Ser	Val	Pro	Gln	Ala	Phe	Ser	Phe
		35					40					45			
Thr	Leu	Ala	Cys	Phe	Leu	Thr	Gly	Ile	Ala	Val	Gly	Ala	Tyr	Phe	Gly
	50					55					60				
Lys	Arg	Ile	Cys	Arg	Ser	Arg	Phe	Val	Asp	Ile	Pro	Phe	Ile	Gly	Gln
65					70					75					80
Cys	Phe	Leu	Trp	Ala	Gly	Ile	Ala	Asp	Phe	Leu	Ile	Leu	Gly	Ala	Ala
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Trp	Leu	Leu	Thr	Gly	Phe	Ser	Gly	Phe	Val	His	His	Ala	Gly	Ile	Phe
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Ile	Thr	Leu	Ser	Ala	Val	Val	Arg	Gly	Leu	Ile	Phe	Pro	Leu	Val	His
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His	Val	Gly	Thr	Asp	Gly	Asn	Lys	Ser	Gly	Arg	Gln	Val	Ser	Asn	Val
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Tyr	Phe	Ala	Asn	Val	Ala	Gly	Ser	Ala	Leu	Gly	Pro	Val	Leu	Ile	Gly
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Phe	Val	Ile	Leu	Asp	Phe	Leu	Ser	Thr	Gln	Gln	Ile	Tyr	Leu	Leu	Ile
				165					170					175	
Cys	Leu	Ile	Ser	Ala	Ala	Val	Pro	Leu	Phe	Cys	Thr	Leu	Phe	Gln	Lys
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Ser	Leu	Arg	Leu	Asn	Ala	Val	Ser	Val	Ala	Val	Ser	Leu	Met	Phe	Gly
		195					200					205			
Ile	Leu	Met	Phe	Leu	Leu	Pro	Asp	Ser	Val	Phe	Gln	Asn	Ile	Ala	Asp
	210					215					220				
Arg	Pro	Asp	Arg	Leu	Ile	Glu	Asn	Lys	His	Gly	Ile	Val	Ala	Val	Tyr
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His	Arg	Asp	Gly	Asp	Lys	Val	Val	Tyr	Gly	Ala	Asn	Val	Tyr	Asp	Gly
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Ala	Tyr	Asn	Thr	Asp	Val	Phe	Asn	Ser	Val	Asn	Gly	Ile	Glu	Arg	Ala
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Tyr	Leu	Leu	Pro	Ser	Leu	Lys	Ser	Gly	Ile	Arg	Arg	Ile	Phe	Val	Val

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Ile	Ala	Asp	Glu	Pro	Gln	Ile	Ala	Pro	Leu	Leu	Gln	Asp	Lys	Arg	Val
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Glu	Lys	Phe	Asp	Leu	Ile	Leu	Met	Asn	Thr	Thr	Trp	Tyr	Trp	Arg	Ala
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His	Ala	Phe	Ala	Thr	Ala	Val	His	Ser	Ile	Pro	Tyr	Ala	Tyr	Arg	Tyr
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			420					425					430		
Glu	Leu	Leu	Lys	Gln	Arg	Leu	Ser	Arg	Leu	Ile	Trp	Pro	Glu	Ser	Gly
			435				440					445			
Arg	His	Val	Phe	Asp	Ser	Ser	Thr	Val	Asp	Ala	Ala	Ala	Gln	Lys	Val
			450				455					460			
Val	Ser	Arg	Met	Leu	Ile	Gln	Met	Thr	Glu	Pro	Ser	Ala	Gly	Ala	Glu
465				470					475						480
Val	Ile	Thr	Asp	Asp	Asn	Met	Ile	Val	Glu	Tyr	Lys	Tyr	Gly	Arg	Gly
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Ile

<210> 1325

<211> 963

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1325

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<210> 1326

<211> 320

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1326

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Arg Phe Ala Val Glu Gln Glu Leu Val Ala Ala Ser Ala Arg Ala Ala
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Val Lys Asp Met Asp Leu Gln Ala Leu His Gly Arg Lys Val Ala Leu
      50             55             60

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Tyr Ile Ala Thr Met Gly Asp Gln Gly Ser Gly Ser Leu Thr Gly Gly
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Arg Tyr Ser Ile Asp Ala Leu Ile Arg Gly Glu Tyr Ile Asn Ser Pro
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Ala Val Arg Thr Asp Tyr Thr Tyr Pro Arg Tyr Glu Thr Thr Ala Glu
      100             105             110

```

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Thr Thr Ser Gly Gly Leu Thr Gly Leu Thr Thr Ser Leu Ser Thr Leu
      115             120             125

```

```

Asn Ala Pro Ala Leu Ser Arg Thr Gln Ser Asp Gly Ser Gly Ser Arg
      130             135             140

```

```

Ser Ser Leu Gly Leu Asn Ile Gly Gly Met Gly Asp Tyr Arg Asn Glu
      145             150             155             160

```

```

Thr Leu Thr Thr Asn Pro Arg Asp Thr Ala Phe Leu Ser His Leu Val
          165             170             175

```

```

Gln Thr Val Phe Phe Leu Arg Gly Ile Asp Val Val Ser Pro Ala Asn
      180             185             190

```

```

Ala Asp Thr Asp Val Phe Ile Asn Ile Asp Val Phe Gly Thr Ile Arg

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195	200	205
Asn Arg Thr Glu Met His Leu Tyr Asn Ala Glu Thr Leu Lys Ala Gln		
210	215	220
Thr Lys Leu Glu Tyr Phe Ala Val Asp Arg Thr Asn Lys Lys Leu Leu		
225	230	235 240
Ile Lys Pro Lys Thr Asn Ala Phe Glu Ala Ala Tyr Lys Glu Asn Tyr		
	245	250 255
Ala Leu Trp Met Gly Pro Tyr Lys Val Ser Lys Gly Ile Lys Pro Thr		
	260	265 270
Glu Gly Leu Met Val Asp Phe Ser Asp Ile Gln Pro Tyr Gly Asn His		
	275	280 285
Thr Gly Asn Ser Ala Pro Ser Val Glu Ala Asp Asn Ser His Glu Gly		
	290	295 300
Tyr Gly Tyr Ser Asp Glu Ala Val Arg Gln His Arg Gln Gly Gln Pro		
305	310	315 320

<210> 1327
 <211> 963
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 1327
 atgcaagcac ggctgctgat acctattctt ttttcagttt ttatatttatac cgcctgcggg 60
 aactgacag gtattccatc gcatggcgga ggtaaacgct ttgcggtcga acaagaactt 120
 gtggccgctt ctgccagagc tgccgttaaa gacatggatt tacaggcatt acacggacga 180
 aaagtgtcat tgtacattgc cactatgggc gaccaagggt caggcagttt gacagggggg 240
 cgctactcca ttgatgcact gattcgtggc gaatacataa acagccctgc cgtccgtacc 300
 gattacacct atccacgtta cgaaaccacc gctgaaacaa catcaggcgg tttgacaggt 360
 ttaaccactt ctttatctac acttaatgcc cctgcactct ctgcaccca atcagacggg 420
 agcggaagta aaagcagtct gggcttaaat attggcggga tgggggatta tcgaaatgaa 480
 acctgacga ctaacccgcg cgacactgcc tttctttccc acttggtaca gaccgtattt 540
 ttcctgcgcg gcatagacgt tgtttctcct gccaatgccg atacagatgt gtttattaac 600
 atcgacgtat tcggaacgat acgcaacaga accgaaatgc acctatacaa tgccgaaaca 660
 ctgaaaagccc aaacaaaact ggaatatttc gcagtagaca gaaccaataa aaaattgctc 720
 atcaaaccac aaaccaatgc gtttgaagct gcctataaag aaaattacgc attgtggatg 780
 gggccgtata aagtaagcaa aggaattaaa ccgacggaag gattaatggt cgatttctcc 840
 gatatccgac catacggcaa tcatacgggt aactccgccc catccgtaga ggctgataac 900
 agtcatgagg ggtatggata cagcgatgaa gtagtgcgac aacatagaca aggacaacct 960
 tga 963

<210> 1328
 <211> 320
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 1328

Met Gln Ala Arg Leu Leu Ile Pro Ile Leu Phe Ser Val Phe Ile Leu
1 5 10 15

Ser Ala Cys Gly Thr Leu Thr Gly Ile Pro Ser His Gly Gly Gly Lys
20 25 30

Arg Phe Ala Val Glu Gln Glu Leu Val Ala Ala Ser Ala Arg Ala Ala
35 40 45

Val Lys Asp Met Asp Leu Gln Ala Leu His Gly Arg Lys Val Ala Leu
50 55 60

Tyr Ile Ala Thr Met Gly Asp Gln Gly Ser Gly Ser Leu Thr Gly Gly
65 70 75 80

Arg Tyr Ser Ile Asp Ala Leu Ile Arg Gly Glu Tyr Ile Asn Ser Pro
85 90 95

Ala Val Arg Thr Asp Tyr Thr Tyr Pro Arg Tyr Glu Thr Thr Ala Glu
100 105 110

Thr Thr Ser Gly Gly Leu Thr Gly Leu Thr Thr Ser Leu Ser Thr Leu
115 120 125

Asn Ala Pro Ala Leu Ser Arg Thr Gln Ser Asp Gly Ser Gly Ser Lys
130 135 140

Ser Ser Leu Gly Leu Asn Ile Gly Gly Met Gly Asp Tyr Arg Asn Glu
145 150 155 160

Thr Leu Thr Thr Asn Pro Arg Asp Thr Ala Phe Leu Ser His Leu Val
165 170 175

Gln Thr Val Phe Phe Leu Arg Gly Ile Asp Val Val Ser Pro Ala Asn
180 185 190

Ala Asp Thr Asp Val Phe Ile Asn Ile Asp Val Phe Gly Thr Ile Arg
195 200 205

Asn Arg Thr Glu Met His Leu Tyr Asn Ala Glu Thr Leu Lys Ala Gln
210 215 220

Thr Lys Leu Glu Tyr Phe Ala Val Asp Arg Thr Asn Lys Lys Leu Leu
225 230 235 240

Ile Lys Pro Lys Thr Asn Ala Phe Glu Ala Ala Tyr Lys Glu Asn Tyr
245 250 255

Ala Leu Trp Met Gly Pro Tyr Lys Val Ser Lys Gly Ile Lys Pro Thr
260 265 270

Glu Gly Leu Met Val Asp Phe Ser Asp Ile Arg Pro Tyr Gly Asn His
275 280 285

Thr Gly Asn Ser Ala Pro Ser Val Glu Ala Asp Asn Ser His Glu Gly

290

295

300

Tyr Gly Tyr Ser Asp Glu Val Val Arg Gln His Arg Gln Gly Gln Pro
 305 310 315 320

<210> 1329

<211> 963

<212> DNA

<213> Neisseria meningitidis

<400> 1329

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gtggccgctt ctgccagagc tgccgttaaa gacatggatt tacaggcatt acacggacga 180
aaagttgcat tgtacattgc aactatgggc gaccaagggt caggcagttt gacagggggg 240
cgctaactcca ttgatgcact gattcgtggc gaatacataa acagccctgc cgtccgtacc 300
gattacacct atccacgtta cgaaaccacc gctgaaacaa catcaggcgg tttgacaggt 360
ttaaccactt ctttatctac acttaatgcc cctgcactct cgcgcaccca atcagacggg 420
agcgggaagta aaagcagtct gggcttaaat attggcgagg tgggggatta tcgaaatgaa 480
accttgacga ctaaccgcg cgacactgcc tttctttccc acttggtaca gaccgtattt 540
ttcctgcgcg gcatagacgt tgtttctcct gccaatgccg atacggatgt gtttattaac 600
atcgacgtat tcggaacgat acgcaacaga accgaaatgc acctatacaa tgccgaaaca 660
ctgaaagccc aaacaaaact ggaatatctt gcagtagaca gaaccaataa aaaattgctc 720
atcaaaccac aaaccaatgc gtttgaagct gcctataaag aaaattacgc attgtggatg 780
ggaccgtata aagtaagcaa aggaattaaa ccgacagaag gattaatggt cgatttctcc 840
gatatccaac catacgcaa tcatatgggt aactctgccc catccgtaga ggctgataac 900
agtcatgagg ggtatggata cagcgatgaa gcagtgcgac gacatagaca agggcaacct 960
tga

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<210> 1330

<211> 320

<212> PRT

<213> Neisseria meningitidis

<400> 1330

```

Met Gln Ala Arg Leu Leu Ile Pro Ile Leu Phe Ser Val Phe Ile Leu
  1 5 10 15

Ser Ala Cys Gly Thr Leu Thr Gly Ile Pro Ser His Gly Gly Gly Lys
  20 25 30

Arg Phe Ala Val Glu Gln Glu Leu Val Ala Ala Ser Ala Arg Ala Ala
  35 40 45

Val Lys Asp Met Asp Leu Gln Ala Leu His Gly Arg Lys Val Ala Leu
  50 55 60

Tyr Ile Ala Thr Met Gly Asp Gln Gly Ser Gly Ser Leu Thr Gly Gly
  65 70 75 80

Arg Tyr Ser Ile Asp Ala Leu Ile Arg Gly Glu Tyr Ile Asn Ser Pro
  85 90 95

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Ala Val Arg Thr Asp Tyr Thr Tyr Pro Arg Tyr Glu Thr Thr Ala Glu
 100 105 110
 Thr Thr Ser Gly Gly Leu Thr Gly Leu Thr Thr Ser Leu Ser Thr Leu
 115 120 125
 Asn Ala Pro Ala Leu Ser Arg Thr Gln Ser Asp Gly Ser Gly Ser Lys
 130 135 140
 Ser Ser Leu Gly Leu Asn Ile Gly Gly Met Gly Asp Tyr Arg Asn Glu
 145 150 155 160
 Thr Leu Thr Thr Asn Pro Arg Asp Thr Ala Phe Leu Ser His Leu Val
 165 170 175
 Gln Thr Val Phe Phe Leu Arg Gly Ile Asp Val Val Ser Pro Ala Asn
 180 185 190
 Ala Asp Thr Asp Val Phe Ile Asn Ile Asp Val Phe Gly Thr Ile Arg
 195 200 205
 Asn Arg Thr Glu Met His Leu Tyr Asn Ala Glu Thr Leu Lys Ala Gln
 210 215 220
 Thr Lys Leu Glu Tyr Phe Ala Val Asp Arg Thr Asn Lys Lys Leu Leu
 225 230 235 240
 Ile Lys Pro Lys Thr Asn Ala Phe Glu Ala Ala Tyr Lys Glu Asn Tyr
 245 250 255
 Ala Leu Trp Met Gly Pro Tyr Lys Val Ser Lys Gly Ile Lys Pro Thr
 260 265 270
 Glu Gly Leu Met Val Asp Phe Ser Asp Ile Gln Pro Tyr Gly Asn His
 275 280 285
 Met Gly Asn Ser Ala Pro Ser Val Glu Ala Asp Asn Ser His Glu Gly
 290 295 300
 Tyr Gly Tyr Ser Asp Glu Ala Val Arg Arg His Arg Gln Gly Gln Pro
 305 310 315 320

<210> 1331

<211> 1677

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1331

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 gatggcaaga tgcagcatca ctttgacggc agggttgcgt tcgtcaaacg attcggacac 120
 caagccgctg tctcggtcga ggccgagggt cagctgggtc atgtcggttc agccgatgga 180
 gaagccgtcg aagtattgca ggaattgttc cgccaatacc gcgttgctcg gcagctcgca 240

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catcataatc aggcgcagge cgtttttgcc gcgttccaag ccgtttttctt tcaatgcctt 300
aaccactgct tcggcttcgc ccaaagtgcg gacgaacgga atcatgattt cgacgttggt 360
cagacccatt tcgtcacgaa cgcgtttcaa ggctttgcat tccaaggcga aacagtcttt 420
gaagctctcg gcaacataac gcgcgcgacc acggaagccc aacatcgggt tttcttcatg 480
cggttcgtat acgctgcgcg cgaccagggt ggcgatttcg ttggatttga agtcggacat 540
acggacgatg gttttacgcg gataaaccga tgcggcaagc gttgccacgc cttcggcgat 600
tttatcgacg tagaagtcga caggggatgc gtaaccggcg atgcggcgga taatttccgc 660
tttcagttcg tcgtcttggt tgtcaaattc caacaaggct ttcgggtgga tgccgatttg 720
gcggttgatg ataaattcca tacgcgccaa gccgatgcct tcgctgggca gattggcgaa 780
gctgaatgcg agttcgggat tgccgacgtt catcatgact ttgacgggtg cttttggcat 840
attgtccaag gcgacatcgg taatttgtac gtccagcagg ccggcataga taaagccggg 900
atcgccttcg gcacaggata cggtaacttc ctgaccgttt tccaagagtt cggtcgcatt 960
gccgcagccg acgacggcag gaatacccag ttcgcgcgcg atgatggcgg cgtggcagg 1020
gcgtccgccg cggttgggtca cgatggcgga agcacgtttc atcacgggtt cccaatccgg 1080
atcggtcgat tcggtaacca gtacgtcgcc ggcttcgacg gaatccatct cggaagcatc 1140
tttaatcagg cgcaccttgc cctgaccgac tttttgaccg atggcacgac cttcgcacaa 1200
gacggttttt tcgccgttga tggcgtagcg gcgcaggttg ccgctgcctt cttcttggga 1260
tttgacgggt tcggggcggg cttgcaggat gtagagtttg ccgtccaggc cgtcgcgtcc 1320
ccattcgata tccatcgggg gcccgtagtg tttttcgatg gtcagcgcgt agtgtgccaa 1380
ctcggtgatt tcttcgtcgg taatggagaa gcggttgcg tcttcttcgg ggacttcgac 1440
gttggttacc gatttgccgg cttcggcttt gtccgtgaaa atcattttga tgtgtttcga 1500
acccatggtc ttgcgcagga tggcgggttt gcctgctttg agcgtgggtt tgaacacata 1560
aaattcgtcc gggttgaccg cgccttgtac gacgttttcg ccagaccgt aagaggaggt 1620
aacaagacg acttggttgt agccggattc ggtgtcgagg gtgaacatca cacctga 1677

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<210> 1332

<211> 558

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1332

```

Met Val Gly Arg Thr Leu Thr Ala Asp Thr Asp Ile Phe Val Leu Leu
  1                      5                      10                     15

```

```

Ala Ala Gly Gly Asp Gly Lys Met Gln His His Phe Asp Gly Arg Val
      20                      25                     30

```

```

Ala Phe Val Lys Arg Phe Gly His Gln Ala Ala Val Ser Val Glu Ala
      35                      40                     45

```

```

Glu Gly Gln Leu Gly His Val Val Arg Ala Asp Gly Glu Ala Val Glu
      50                      55                     60

```

```

Val Leu Gln Glu Leu Phe Arg Gln Tyr Arg Val Ala Arg Gln Leu Ala
      65                      70                      75                     80

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His His Asn Gln Ala Gln Ala Val Phe Ala Ala Phe Gln Ala Val Phe
      85                      90                     95

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Phe Gln Cys Leu Asn His Cys Phe Gly Phe Ala Gln Ser Ala Asp Glu
      100                     105                    110

```

```

Arg Asn His Asp Phe Asp Val Gly Gln Thr His Phe Val Thr Asn Ala
      115                     120                    125

```

Phe Gln Gly Phe Ala Phe Gln Gly Glu Thr Val Phe Glu Ala Leu Gly
 130 135 140
 Asn Ile Thr Arg Arg Thr Thr Glu Ala Gln His Arg Val Phe Phe Met
 145 150 155 160
 Arg Phe Val Tyr Ala Ala Ala Asp Gln Val Gly Val Phe Val Gly Phe
 165 170 175
 Glu Val Gly His Thr Asp Asp Gly Phe Thr Arg Ile Asn Arg Cys Gly
 180 185 190
 Lys Arg Cys His Ala Phe Gly Asp Phe Ile Asp Val Glu Val Asp Arg
 195 200 205
 Gly Cys Val Thr Gly Asp Ala Ala Asp Asn Phe Arg Phe Gln Phe Val
 210 215 220
 Val Leu Phe Val Lys Phe Gln Gln Gly Phe Arg Val Asp Ala Asp Leu
 225 230 235 240
 Ala Val Asp Asp Lys Phe His Thr Arg Gln Ala Asp Ala Phe Ala Gly
 245 250 255
 Gln Ile Gly Glu Ala Glu Cys Glu Phe Gly Ile Ala Asp Val His His
 260 265 270
 Asp Phe Asp Gly Cys Phe Trp His Ile Val Gln Gly Asp Ile Gly Asn
 275 280 285
 Leu Tyr Val Gln Gln Ala Gly Ile Asp Lys Ala Gly Ile Ala Phe Gly
 290 295 300
 Thr Gly Tyr Gly Asn Phe Leu Thr Val Phe Gln Glu Phe Gly Arg Ile
 305 310 315 320
 Ala Ala Ala Asp Asp Gly Arg Asn Thr Gln Phe Ala Arg Asp Asp Gly
 325 330 335
 Gly Val Ala Gly Ala Ser Ala Ala Val Gly His Asp Gly Gly Ser Thr
 340 345 350
 Phe His His Gly Phe Pro Ile Arg Ile Gly His Val Gly Asn Gln Tyr
 355 360 365
 Val Ala Gly Phe Asp Gly Ile His Leu Gly Ser Ile Phe Asn Gln Ala
 370 375 380
 His Leu Ala Leu Thr Asp Phe Leu Thr Asp Gly Thr Thr Phe Ala Gln
 385 390 395 400
 Asp Gly Phe Phe Ala Val Asp Gly Val Ala Ala Gln Val Ala Ala Ala
 405 410 415
 Phe Phe Leu Gly Phe Asp Gly Phe Gly Ala Gly Leu Gln Asp Val Glu
 420 425 430

Phe Ala Val Gln Ala Val Ala Ser Pro Phe Asp Ile His Arg Ala Ala
 435 440 445

Val Val Phe Phe Asp Gly Gln Arg Val Val Cys Gln Leu Gly Asp Phe
 450 455 460

Phe Val Gly Asn Gly Glu Ala Val Ala Val Phe Phe Gly Asp Phe Asp
 465 470 475 480

Val Gly Tyr Arg Phe Ala Gly Phe Gly Phe Val Gly Glu Asn His Phe
 485 490 495

Asp Val Phe Arg Thr His Gly Leu Ala Gln Asp Gly Gly Phe Ala Cys
 500 505 510

Phe Glu Arg Gly Phe Glu His Ile Lys Phe Val Arg Val Asp Arg Ala
 515 520 525

Leu Tyr Asp Val Phe Ala Gln Thr Val Arg Gly Gly Asn Lys Asp Asp
 530 535 540

Leu Val Val Ala Gly Phe Gly Val Glu Gly Glu His His Thr
 545 550 555

<210> 1333

<211> 1677

<212> DNA

<213> Neisseria meningitidis

<400> 1333

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gatggcaagg tgcagcatca ctttgacggc agggttgctg tcgtcaaacg attcggatac 120
caagccgctg tcgcgggtcg gaccgagggt cagtgggtc atgtcgctcg agccgatgga 180
gaagccgtcg aagtattgca ggaattgttc cgccaatacc gcgttgctcg gcagctcgca 240
catcataatc aggcgcaggc cgtttttgcc gcgttccaag ccgttttctt tcagggcctt 300
gacaacggmt tcggtctcgc ccaaagtgcg gacgaacgga atcatgattt caacgttgy 360
caacccatt tcatcgcgga cgcgtttcaa ggctttgcat tccaaggcga aacagtctt 420
gaagttgtcg gcgacataac gcgcgcacc acggaagccc aacatcggtt tttcttcag 480
cgttcgtat acgttgccgc cgaccaggtt ggctattcg ttggatttga agtcggacat 540
acggacgatg gttttacgcg gataaacgga tgcggccaat gtcgccacgc cttcggcgat 600
tttatcgacg tagaagtcca caggggacgc gtaaccggcg atacggcggg taatttccgc 660
ttttaattcg tcgtcttggt tgtcaaattc caacaargct ttgggggtgga taccgatttg 720
gcggttgatg ataaattcca tacgcgccaa gccgatgcct tcgtgggca ggttggcgaa 780
gctgaatgcg agttcgggat tgccgacgtt catcatgact tttacagggt ctttaggcat 840
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atcgcttcg gcacaggata cggtaacttc ttgaccgttt ttcagcaatt cggttgcatt 960
gccgcagccg acaacggcag gaatgcccaa ttcacgcgcg atgatggcgg cgtggcagg 1020
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tacggttttg tcgcggttga tggcgaagcg gcgcagggtt cggttgcctt cttcttggga 1260
ttttacggtt tcgggacggg cttgcaggat gtagagtttg ccgtccaagc cgtcgcgtcc 1320
ccattcgata tccatcgggc ggccgtagtg tttttcgatg gtcagtgcgt aatgcgccaa 1380
ctcagtaatt tcttcgtcgg taatggagaa gcggttgccg tcttcctcgg ggacatcgac 1440
gttggttacg gatttaccgg cttctgcttt gtcggtaaaa atcattttga tgtgttttga 1500
acccatggtt ttacgcagga tggcgggctt gcccgytttg agcgtgggtt tgaacacatr 1560

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aaattcggtcc ggggttgaccg caccttgtac gacgttttcg cccagaccgt aagaggaggt 1620
aacaagacg acygtgatcgt akccggattc ggtgtcgagg gtgaacatca cacctga 1677

<210> 1334
<211> 558
<212> PRT
<213> Neisseria meningitidis

<400> 1334
Met Val Gly Xaa Ala Leu Thr Ala Asp Ala Asp Ile Phe Val Leu Leu
1 5 10 15

Ala Ala Gly Gly Asp Gly Lys Val Gln His His Phe Asp Gly Arg Val
20 25 30

Ala Phe Val Lys Arg Phe Gly Tyr Gln Ala Ala Val Ala Val Glu Thr
35 40 45

Glu Gly Gln Leu Gly His Val Val Arg Ala Asp Gly Glu Ala Val Glu
50 55 60

Val Leu Gln Glu Leu Phe Arg Gln Tyr Arg Val Ala Arg Gln Leu Ala
65 70 75 80

His His Asn Gln Ala Gln Ala Val Phe Ala Ala Phe Gln Ala Val Phe
85 90 95

Phe Gln Gly Phe Asp Asn Gly Phe Gly Phe Ala Gln Ser Ala Asp Glu
100 105 110

Arg Asn His Asp Phe Asn Val Gly Gln Pro His Phe Ile Ala Asp Ala
115 120 125

Phe Gln Gly Phe Ala Phe Gln Gly Glu Thr Val Phe Glu Val Val Gly
130 135 140

Asp Ile Thr Arg Arg Thr Thr Glu Ala Gln His Arg Val Phe Phe Met
145 150 155 160

Arg Phe Val Tyr Val Ala Ala Asp Gln Val Gly Val Phe Val Gly Phe
165 170 175

Glu Val Gly His Thr Asp Asp Gly Phe Thr Arg Ile Asn Arg Cys Gly
180 185 190

Gln Cys Arg His Ala Phe Gly Asp Phe Ile Asp Val Glu Val Asp Arg
195 200 205

Gly Arg Val Thr Gly Asp Thr Ala Gly Asn Phe Arg Phe Xaa Phe Val
210 215 220

Val Leu Phe Val Lys Phe Gln Gln Xaa Phe Gly Val Asp Thr Asp Leu
225 230 235 240

Ala Val Asp Asp Lys Phe His Thr Arg Gln Ala Asp Ala Phe Ala Gly

[illegible]

Leu Ile Val Xaa Gly Phe Gly Val Glu Gly Glu His His Thr
 545 550 555

<210> 1335
 <211> 1671
 <212> DNA
 <213> Neisseria meningitidis

<400> 1335
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 caagccgctg tcgcggtcga gaccgagggt cagttgggtc atgtcgttcg agccgatgga 180
 gaagccgctg aagtattgca ggaattgttc cgccaatacc gcgttgctcg gcagctcgca 240
 catcataatc aggcgcaggc cgtttttgcc gcgttccaag ccgttttctt tcagggcttt 300
 gacaacggct tcggcttcgc ccaaagtgcg gacgaacgga atcatgattt caacgttggg 360
 caacccccatt tcatcgcgga cgcgtttcaa ggctttgcat tccaaggcga aacagtcttt 420
 gaagttgtcg gcgacataac gcgcgcgacc acggaagccc aacatcgggt tttcttcatg 480
 cggttcgtat acgttgccgc cgaccagggt ggcgatttcg ttggatttga agtcggacat 540
 acggacgatg gttttacgcg gataaacgga tgcggccaat gtcgccacgc cttcggcgat 600
 tttatcgacg tagaagtcca caggggacgc gtaacggcg atacggcggg taatttccgc 660
 ttttaattcg tcgtcttggt tgtcaaattc caacaaggct ttgggggtgga taccgatttg 720
 gcggttgatg ataaattcca tacgcgccaa gccgatgcct tcgctgggca ggttggcgaa 780
 gctgaatgcg agttcgggat tgccgacgtt catcatgact tttacagggt ctttaggcat 840
 gttgtccaaa gcaacatcgg taatttgtac gtccagcagg ccggagtaga tgaagccggt 900
 atcgcccttcg gcacaggata cggtaacttc ttgaccgttt ttcagcaatt cggttgcatt 960
 gccgcagccg acaacggcag gaatacccag ttcgcgcgcg atgatggcgg cgtggcagggt 1020
 acgtccgccc ctggttggtca cgatggcgga agcgcgtttc atcaccggtt cccaatctgg 1080
 gtcggtcatg tcggtaacca gtacgtcgcc ggcttcgacg gaatccatct cggaagcatc 1140
 tttaatcagg cgtaccttgc cctgaccgac tttctgaccg atggcgcggc cttcgcacaa 1200
 gacgggtttt tcgcggtga tagaaaagcg gcgcagggtg cggctgcctt cttcctggga 1260
 tttgacgggt tcgggacggg cttgcaggat gtagagtttg ccgtccaagc cgtcgcgtcc 1320
 ccattcgatg tccatcgggc ggccgtagtg ttttctgatg gtcagtgcgt aatgcgccaa 1380
 ctcggtgatt tcttcgtcgg taatggagaa gcggttgcgg tcttcttcgg ggacatcgac 1440
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 gcccatggtt ttgcgcagga tggcagggtt gcctgctttc agcgtggggt tgaacacata 1560
 gaattcgctg ggattgactg cgccttgtag gacgttttcg ccagaccgt aggatgaagt 1620
 gacaaagacg acttggtcgt aaccggattc ggtatcgagg gtgaacatca c 1671

<210> 1336
 <211> 554
 <212> PRT
 <213> Neisseria meningitidis

<400> 1336
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 Ala Ala Gly Gly Asp Gly Lys Val Gln His His Phe Asp Gly Arg Val
 20 25 30
 Ala Phe Val Lys Arg Phe Gly Tyr Gln Ala Ala Val Ala Val Glu Thr
 35 40 45
 Glu Gly Gln Leu Gly His Val Val Arg Ala Asp Gly Glu Ala Val Glu
 50 55 60

Val Leu Gln Glu Leu Phe Arg Gln Tyr Arg Val Ala Arg Gln Leu Ala
65 70 75 80
His His Asn Gln Ala Gln Ala Val Phe Ala Ala Phe Gln Ala Val Phe
85 90 95
Phe Gln Gly Phe Asp Asn Gly Phe Gly Phe Ala Gln Ser Ala Asp Glu
100 105 110
Arg Asn His Asp Phe Asn Val Gly Gln Pro His Phe Ile Ala Asp Ala
115 120 125
Phe Gln Gly Phe Ala Phe Gln Gly Glu Thr Val Phe Glu Val Val Gly
130 135 140
Asp Ile Thr Arg Arg Thr Thr Glu Ala Gln His Arg Val Phe Phe Met
145 150 155 160
Arg Phe Val Tyr Val Ala Ala Asp Gln Val Gly Val Phe Val Gly Phe
165 170 175
Glu Val Gly His Thr Asp Asp Gly Phe Thr Arg Ile Asn Arg Cys Gly
180 185 190
Gln Cys Arg His Ala Phe Gly Asp Phe Ile Asp Val Glu Val Asp Arg
195 200 205
Gly Arg Val Thr Gly Asp Thr Ala Gly Asn Phe Arg Phe Phe Val Val
210 215 220
Leu Phe Val Lys Phe Gln Gln Gly Phe Gly Val Asp Thr Asp Leu Ala
225 230 235 240
Val Asp Asp Lys Phe His Thr Arg Gln Ala Asp Ala Phe Ala Gly Gln
245 250 255
Val Gly Glu Ala Glu Cys Glu Phe Gly Ile Ala Asp Val His His Asp
260 265 270
Phe Tyr Arg Cys Phe Arg His Val Val Gln Ser Asn Ile Gly Asn Leu
275 280 285
Tyr Val Gln Gln Ala Gly Val Asp Glu Ala Gly Ile Ala Phe Gly Thr
290 295 300
Gly Tyr Gly Asn Phe Leu Thr Val Phe Gln Gln Phe Gly Cys Ile Ala
305 310 315 320
Ala Ala Asp Asn Gly Arg Asn Thr Gln Phe Ala Arg Asp Asp Gly Gly
325 330 335
Val Ala Gly Thr Ser Ala Pro Val Gly His Asp Gly Gly Ser Ala Phe
340 345 350
His His Arg Phe Pro Ile Trp Val Gly His Val Gly Asn Gln Tyr Val
355 360 365

Ala Gly Phe Asp Gly Ile His Leu Gly Ser Ile Phe Asn Gln Ala Tyr
370 375 380

Leu Ala Leu Thr Asp Phe Leu Thr Asp Gly Ala Ala Phe Ala Gln Asp
385 390 395 400

Gly Phe Phe Ala Val Asp Arg Lys Ala Ala Gln Val Ala Ala Ala Phe
405 410 415

Phe Leu Gly Phe Asp Gly Phe Gly Thr Gly Leu Gln Asp Val Glu Phe
420 425 430

Ala Val Gln Ala Val Ala Ser Pro Phe Asp Val His Arg Ala Ala Val
435 440 445

Val Phe Phe Asp Gly Gln Cys Val Met Arg Gln Leu Gly Asp Phe Phe
450 455 460

Val Gly Asn Gly Glu Ala Val Ala Val Phe Phe Gly Asp Ile Asp Val
465 470 475 480

Gly Tyr Arg Phe Ala Gly Phe Cys Phe Val Gly Lys Asn His Phe Asp
485 490 495

Val Phe Ala His Gly Phe Ala Gln Asp Gly Arg Phe Ala Cys Phe Gln
500 505 510

Arg Gly Phe Glu His Ile Glu Phe Val Gly Ile Asp Cys Ala Leu Tyr
515 520 525

Asp Val Phe Ala Gln Thr Val Gly Ser Asp Lys Asp Asp Leu Val Val
530 535 540

Thr Gly Phe Gly Ile Glu Gly Glu His His
545 550

<210> 1337

<211> 507

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1337

atgatgaaac cgcacaacct gttccaattc ctgcgcgttt gctccctgac cgtcgcggtc 60
gcttccgcac aggcggggcg ggtggacgcg ctcaagcaat tcaacaacga tgccgacggt 120
atcagcggca gcttcaccca aaccgtccaa agcaaaaaga aaacccaaac cgcgcacggc 180
acgttcaaaa tcctgcgccc gggcctcttc aaatgggaat acactttgcc ctacagacag 240
actattgtcg gcgacggtca aaccgtttgg ctctacgatg ttgatttggt acaagtgacc 300
aagtcgtccc aagaccaggc catcggcggc agccccgcgc ccacacctgtc gaacaaaacc 360
gccctcgaaa gcagttacac gctgaaagag gacggttcgt ccaacggcat cgattatgtg 420
cggggcaacg cccaaacgca acaacgccgg ctaccaatac atccgcatcg gcttcaaagg 480
cggaacctc gccgccatgc agcttaa 507

<210> 1338

<211> 168

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1338

Met Met Lys Pro His Asn Leu Phe Gln Phe Leu Ala Val Cys Ser Leu
1 5 10 15

Thr Val Ala Val Ala Ser Ala Gln Ala Gly Ala Val Asp Ala Leu Lys
20 25 30

Gln Phe Asn Asn Asp Ala Asp Gly Ile Ser Gly Ser Phe Thr Gln Thr
35 40 45

Val Gln Ser Lys Lys Lys Thr Gln Thr Ala His Gly Thr Phe Lys Ile
50 55 60

Leu Arg Pro Gly Leu Phe Lys Trp Glu Tyr Thr Leu Pro Tyr Arg Gln
65 70 75 80

Thr Ile Val Gly Asp Gly Gln Thr Val Trp Leu Tyr Asp Val Asp Leu
85 90 95

Ala Gln Val Thr Lys Ser Ser Gln Asp Gln Ala Ile Gly Gly Ser Pro
100 105 110

Ala Ala Ile Leu Ser Asn Lys Thr Ala Leu Glu Ser Ser Tyr Thr Leu
115 120 125

Lys Glu Asp Gly Ser Ser Asn Gly Ile Asp Tyr Val Arg Gly Asn Ala
130 135 140

Gln Thr Gln Gln Arg Arg Leu Pro Ile His Pro His Arg Leu Gln Arg
145 150 155 160

Arg Gln Pro Arg Arg His Ala Ala
165

<210> 1339

<211> 503

<212> DNA

<213> Neisseria meningitidis

<400> 1339

atgatgaaac cgcacaacct gttccaattc ctgcgcgttt gctccctgac cgtcgccgtc 60
ggttcgcgcac aggcggggcgc ggtagacgcg cttaagcaat tcaacaacga tgccgacggt 120
atcagcggga gtttcaccca amccgtccaa wgcaaaaaga aaacccaaac cgcgcacggc 180
acgttcacaaa tcctgcgacc gggccttttc aaatgggaat acaccaaact tacaggcaaa 240
ccatcgtcgg cgacgggtcaa acygtttggc tmtacgatgt ygatctggca caagtgaaca 300
agtgtgtcca agaccaggcc ataggcgsca gccccgcccgc catcctgtcg aacaaarccg 360
ccctcgaaaag cagctacacg ctgaaagagg acggttcgtc caacggcatc gattatgtgg 420
gcaacgcccc aacgcaacaa cgccgggtac caatacatcc gcatcggtt caaaggcggc 480
aacctcgccg ccatgcagct yaa 503

<210> 1340

<211> 168
 <212> PRT
 <213> Neisseria meningitidis

<400> 1340

```

Met Met Lys Pro His Asn Leu Phe Gln Phe Leu Ala Val Cys Ser Leu
 1          5          10          15

Thr Val Ala Val Ala Ser Ala Gln Ala Gly Ala Val Asp Ala Leu Lys
      20          25          30

Gln Phe Asn Asn Asp Ala Asp Gly Ile Ser Gly Ser Phe Thr Gln Xaa
      35          40          45

Val Gln Xaa Lys Lys Lys Thr Gln Thr Ala His Gly Thr Phe Lys Ile
      50          55          60

Leu Arg Pro Gly Leu Phe Lys Trp Glu Tyr Thr Lys Leu Tyr Arg Gln
      65          70          75          80

Thr Ile Val Gly Asp Gly Gln Thr Val Trp Leu Tyr Asp Val Asp Leu
      85          90          95

Ala Gln Val Thr Lys Ser Ser Gln Asp Gln Ala Ile Gly Xaa Ser Pro
      100          105          110

Ala Ala Ile Leu Ser Asn Lys Xaa Ala Leu Glu Ser Ser Tyr Thr Leu
      115          120          125

Lys Glu Asp Gly Ser Ser Asn Gly Ile Asp Tyr Val Gly Asn Ala Gln
      130          135          140

Thr Gln Gln Arg Arg Leu Pro Ile His Pro His Arg Leu Gln Arg Arg
      145          150          155          160

Gln Pro Arg Arg His Ala Ala Xaa
      165
  
```

<210> 1341
 <211> 504
 <212> DNA
 <213> Neisseria meningitidis

<400> 1341

```

atgatgaaac cgcacaacct gttccaattc ctgcgcgttt gctccctgac cgtctccgtc 60
gcttccgcac aggcggggcg ggtggacgcg ctcaagcaat tcaacaacga tgccgacggt 120
atcagcggca gcttcaccca aaccgtccaa agcaaaaaga aaacccaaac cgcgcacggc 180
acgttcaaaa tcctgcgccc gggcctcttt aaatgggaat acacttcgcc ttacaaacag 240
actattgtcg gcgacgggtca aaccgttttg ctctacgatg tcgatttggc acaagtgacc 300
aagtcgtccc aagaccaggc cataggcggc agccccgcgc ccatacctgtc gaacaaaacc 360
gccctcgaaa gcagctacac gctgaaagag gacggttcgt ccaacggcat cgattatgtg 420
ggcaacgccc aaacgcaaca acgacgggta ccaatacatc cgcacgggct tcaaaggcgg 480
caacctcgcc gccatgcagc ttaa
                                         504
  
```

<210> 1342

<211> 167
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 1342
 Met Met Lys Pro His Asn Leu Phe Gln Phe Leu Ala Val Cys Ser Leu
 1 5 10 15
 Thr Val Ser Val Ala Ser Ala Gln Ala Gly Ala Val Asp Ala Leu Lys
 20 25 30
 Gln Phe Asn Asn Asp Ala Asp Gly Ile Ser Gly Ser Phe Thr Gln Thr
 35 40 45
 Val Gln Ser Lys Lys Lys Thr Gln Thr Ala His Gly Thr Phe Lys Ile
 50 55 60
 Leu Arg Pro Gly Leu Phe Lys Trp Glu Tyr Thr Ser Pro Tyr Lys Gln
 65 70 75 80
 Thr Ile Val Gly Asp Gly Gln Thr Val Trp Leu Tyr Asp Val Asp Leu
 85 90 95
 Ala Gln Val Thr Lys Ser Ser Gln Asp Gln Ala Ile Gly Gly Ser Pro
 100 105 110
 Ala Ala Ile Leu Ser Asn Lys Thr Ala Leu Glu Ser Ser Tyr Thr Leu
 115 120 125
 Lys Glu Asp Gly Ser Ser Asn Gly Ile Asp Tyr Val Gly Asn Ala Gln
 130 135 140
 Thr Gln Gln Arg Arg Leu Pro Ile His Pro His Arg Leu Gln Arg Arg
 145 150 155 160
 Gln Pro Arg Arg His Ala Ala
 165

<210> 1343
 <211> 624
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 1343
 atgatgaaac cgcacaacct gttccaattc ctcgccggtt gctccctgac cgtcgccggtc 60
 gcttccgcac aggcgggagc ggtggacgcg ctcaagcaat tcaacaacga tgccgacggt 120
 atcagcggca gcttaccaca aaccgtccaa agcaaaaaga aaaccctaac cgcgcacggc 180
 acgttcaaaa tcctgcgccc gggcctcttc aaatgggaat acactttgcc ctacagacag 240
 actattgtcg gcgacggtca aaccgttttg ctctacgatg ttgatttggt acaagtgacc 300
 aagtcgtccc aagaccaggc catcggcggc agccccgcgc ccacccgtgc gaacaaaacc 360
 gccctcgaaa gcagttacac gctgaaagag gacggttcgt ccaacggcat cgattatgtg 420
 cgggcaacgc ccaaacgcaa caacgccggc taccaatata tccgcatcgg cttcaaaggc 480
 ggcaacctcg ccgccatgca gcttaaagac agcttcggca accaaacctc catcagtttc 540
 ggcggtttga ataccaatcc ccaactctcg cgcggcgcggt tcaagtttac cccgcccaaa 600
 ggcggtggacg tgttgagcaa ctga 624

<210> 1344
 <211> 207
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 1344
 Met Met Lys Pro His Asn Leu Phe Gln Phe Leu Ala Val Cys Ser Leu
 1 5 10 15
 Thr Val Ala Val Ala Ser Ala Gln Ala Gly Ala Val Asp Ala Leu Lys
 20 25 30
 Gln Phe Asn Asn Asp Ala Asp Gly Ile Ser Gly Ser Phe Thr Gln Thr
 35 40 45
 Val Gln Ser Lys Lys Lys Thr Gln Thr Ala His Gly Thr Phe Lys Ile
 50 55 60
 Leu Arg Pro Gly Leu Phe Lys Trp Glu Tyr Thr Leu Pro Tyr Arg Gln
 65 70 75 80
 Thr Ile Val Gly Asp Gly Gln Thr Val Trp Leu Tyr Asp Val Asp Leu
 85 90 95
 Ala Gln Val Thr Lys Ser Ser Gln Asp Gln Ala Ile Gly Gly Ser Pro
 100 105 110
 Ala Ala Ile Leu Ser Asn Lys Thr Ala Leu Glu Ser Ser Tyr Thr Leu
 115 120 125
 Lys Glu Asp Gly Ser Ser Asn Gly Ile Asp Tyr Val Arg Ala Thr Pro
 130 135 140
 Lys Arg Asn Asn Ala Gly Tyr Gln Tyr Ile Arg Ile Gly Phe Lys Gly
 145 150 155 160
 Gly Asn Leu Ala Ala Met Gln Leu Lys Asp Ser Phe Gly Asn Gln Thr
 165 170 175
 Ser Ile Ser Phe Gly Gly Leu Asn Thr Asn Pro Gln Leu Ser Arg Gly
 180 185 190
 Ala Phe Lys Phe Thr Pro Pro Lys Gly Val Asp Val Leu Ser Asn
 195 200 205

<210> 1345
 <211> 624
 <212> DNA
 <213> Neisseria meningitidis

<400> 1345
 atgatgaaac cgcacaacct gttccaattc ctgcgcgttt gctccctgac cgtcgccgtc 60
 gcttcgcac aggcggggcg gtagacgcg cttaagcaat tcaacaacga tgccgacggt 120
 atcagcggca gttcaccca aaccgtccaa agcaaaaaga aaaccctaac cgcgcacggc 180
 acgttcaaaa tctgcgacc gggccttttc aaatgggaat acaccaaac ttacaggcaa 240

```

accatcgtcg ggcagcggtca aaccgtttgg ctctacgatg ttgatctggc acaagtgacc 300
aagtcgtccc aagaccaggc cataggcggc agccccgcgc ccatacctgtc gaacaaaacc 360
gccctcgaaa gcagctacac gctgaaagag gacggttcgt ccaacggcat cgattatgtg 420
ctggcaacgc ccaaacgcaa caacgccggc taccaatata tccgcatcgg cttcaaaggc 480
ggcaacctcg ccgccaatgca gcttaaagac agcttcggca accaaacctc catcagtttc 540
ggcggtttga ataccaatcc ccaactctcg cgcggcgcgt tcaagtttac cccgccc aaa 600
ggcgtggacg tgttgagcaa ctga 624

```

<210> 1346

<211> 207

<212> PRT

<213> Neisseria meningitidis

<400> 1346

```

Met Met Lys Pro His Asn Leu Phe Gln Phe Leu Ala Val Cys Ser Leu
  1             5             10             15

```

```

Thr Val Ala Val Ala Ser Ala Gln Ala Gly Ala Val Asp Ala Leu Lys
      20             25             30

```

```

Gln Phe Asn Asn Asp Ala Asp Gly Ile Ser Gly Ser Phe Thr Gln Thr
      35             40             45

```

```

Val Gln Ser Lys Lys Lys Thr Gln Thr Ala His Gly Thr Phe Lys Ile
      50             55             60

```

```

Leu Arg Pro Gly Leu Phe Lys Trp Glu Tyr Thr Lys Pro Tyr Arg Gln
      65             70             75             80

```

```

Thr Ile Val Gly Asp Gly Gln Thr Val Trp Leu Tyr Asp Val Asp Leu
      85             90             95

```

```

Ala Gln Val Thr Lys Ser Ser Gln Asp Gln Ala Ile Gly Gly Ser Pro
      100            105            110

```

```

Ala Ala Ile Leu Ser Asn Lys Thr Ala Leu Glu Ser Ser Tyr Thr Leu
      115            120            125

```

```

Lys Glu Asp Gly Ser Ser Asn Gly Ile Asp Tyr Val Leu Ala Thr Pro
      130            135            140

```

```

Lys Arg Asn Asn Ala Gly Tyr Gln Tyr Ile Arg Ile Gly Phe Lys Gly
      145            150            155            160

```

```

Gly Asn Leu Ala Ala Met Gln Leu Lys Asp Ser Phe Gly Asn Gln Thr
      165            170            175

```

```

Ser Ile Ser Phe Gly Gly Leu Asn Thr Asn Pro Gln Leu Ser Arg Gly
      180            185            190

```

```

Ala Phe Lys Phe Thr Pro Pro Lys Gly Val Asp Val Leu Ser Asn
      195            200            205

```

<210> 1347

<211> 624

<212> DNA

<213> *Neisseria meningitidis*

<400> 1347

```
atgatgaaac cgcacaacct gttccaattc ctcgccgttt gctccctgac cgtctccgtc 60
gcttcgcgac aggcgggcgc ggtggacgcg ctcaagcaat tcaacaacga tgccgacggt 120
atcagcggca gcttcaccca aaccgtccaa agcaaaaaga aaaccctaac cgcgcacggc 180
acgttcaaaa tcttgcgccc gggcctcttt aaatgggaat acacttcgcc ttacaaacag 240
actattgtcg gcgacggtca aaccgtttgg ctctacgatg tcgatttggc acaagtgacc 300
aagtcgtccc aagaccaggc cataggcggc agccccgcgc ccctcctgtc gaacaaaacc 360
gccctcgaaa gcagctacac gctgaaagag gacggttcgt ccaacggcat cgattatgtg 420
ctggcaacgc ccaaacgcaa caacgccggc taccaatata tccgcatcgg cttcaaaggc 480
ggcaacctcg ccgccatgca gcttaaagac agcttcggca atcaaacctc catcagtttc 540
ggcggtttga ataccaatcc ccaactctcg cgcggcgcgt tcaagtttac cccgcccata 600
ggcgtggacg tggtgagcaa ctga 624
```

<210> 1348

<211> 207

<212> PRT

<213> *Neisseria meningitidis*

<400> 1348

```
Met Met Lys Pro His Asn Leu Phe Gln Phe Leu Ala Val Cys Ser Leu
  1                      5                      10                      15
```

```
Thr Val Ser Val Ala Ser Ala Gln Ala Gly Ala Val Asp Ala Leu Lys
          20                      25                      30
```

```
Gln Phe Asn Asn Asp Ala Asp Gly Ile Ser Gly Ser Phe Thr Gln Thr
          35                      40                      45
```

```
Val Gln Ser Lys Lys Lys Thr Gln Thr Ala His Gly Thr Phe Lys Ile
          50                      55                      60
```

```
Leu Arg Pro Gly Leu Phe Lys Trp Glu Tyr Thr Ser Pro Tyr Lys Gln
          65                      70                      75                      80
```

```
Thr Ile Val Gly Asp Gly Gln Thr Val Trp Leu Tyr Asp Val Asp Leu
          85                      90                      95
```

```
Ala Gln Val Thr Lys Ser Ser Gln Asp Gln Ala Ile Gly Gly Ser Pro
          100                     105                     110
```

```
Ala Ala Ile Leu Ser Asn Lys Thr Ala Leu Glu Ser Ser Tyr Thr Leu
          115                     120                     125
```

```
Lys Glu Asp Gly Ser Ser Asn Gly Ile Asp Tyr Val Leu Ala Thr Pro
          130                     135                     140
```

```
Lys Arg Asn Asn Ala Gly Tyr Gln Tyr Ile Arg Ile Gly Phe Lys Gly
          145                     150                     155                     160
```

```
Gly Asn Leu Ala Ala Met Gln Leu Lys Asp Ser Phe Gly Asn Gln Thr
          165                     170                     175
```

```
Ser Ile Ser Phe Gly Gly Leu Asn Thr Asn Pro Gln Leu Ser Arg Gly
```

180	185	190
Ala Phe Lys Phe Thr Pro Pro Lys Gly Val Asp Val Leu Ser Asn		
195	200	205

<210> 1349
 <211> 207
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1349
 atgtccgcgc cgtcggcatc ggtaatcatt ttgttccatg ccgcttcgat ttcggcatcg 60
 agctgttcgg ggaagggcgt gtccaaaatc cattggcgga tttctttgcc gacgcgtgcc 120
 agttcggaaa cgtcttcgac atccaatttt gccagagcgg cggaatatgc ttcgttcaga 180
 ccgttgtgtg cgagaaatgc gcggtag 207

<210> 1350
 <211> 68
 <212> PRT
 <213> Neisseria gonorrhoeae

<400> 1350
 Met Ser Ala Pro Ser Ala Ser Val Ile Ile Leu Phe His Ala Ala Ser
 1 5 10 15
 Ile Ser Ala Ser Ser Cys Ser Gly Lys Gly Val Ser Lys Ile His Trp
 20 25 30
 Arg Ile Ser Leu Pro Thr Arg Ala Ser Ser Glu Thr Ser Ser Thr Ser
 35 40 45
 Asn Phe Ala Arg Ala Ala Glu Met Arg Ser Phe Arg Pro Leu Cys Ala
 50 55 60
 Arg Asn Ala Arg
 65

<210> 1351
 <211> 207
 <212> DNA
 <213> Neisseria meningitidis

<400> 1351
 atgtccgcac cgccggcatc ggcaaccatt ttgttccatg ccgcttcgat ttcggcatcg 60
 agctgttcgg ggaagggcgt atccaaaatc cattggcgga tttctttgcc gacgcgtgcc 120
 agttcggcaa cgtcttcgac atccaatttt gccagtgcgg cggaatatgc ttcgttcaga 180
 ccgttgtgtg cgaggaatgc gcggtag 207

<210> 1352
 <211> 68
 <212> PRT
 <213> Neisseria meningitidis

<400> 1352

Met Ser Ala Pro Pro Ala Ser Ala Thr Ile Leu Phe His Ala Ala Ser
1 5 10 15

Ile Ser Ala Ser Ser Cys Ser Gly Lys Gly Val Ser Lys Ile His Trp
20 25 30

Arg Ile Ser Leu Pro Thr Arg Ala Ser Ser Ala Thr Ser Ser Thr Ser
35 40 45

Asn Phe Ala Ser Ala Ala Glu Met Arg Ser Leu Arg Pro Leu Cys Ala
50 55 60

Arg Asn Ala Arg
65

<210> 1353

<211> 207

<212> DNA

<213> Neisseria meningitidis

<400> 1353

atgtccgcgc cgccggcatc ggcaaccatt ttgttccatg ccgcttcgat ttcggcatcg 60
agctgttcgg ggaagggcgt gtccaaaatc cattggcgga tttctttgcc gacgcgtgcc 120
agttcggcaa cgtcttcgac atctaatttt gccagtgcgg cggaaatgcg ttcgctcaga 180
ccgttgtgtg cgaggaatgc gcggtag 207

<210> 1354

<211> 207

<212> PRT

<213> Neisseria meningitidis

<400> 1354

Ala Thr Gly Thr Cys Cys Gly Cys Gly Cys Cys Gly Cys Cys Gly Gly
1 5 10 15

Cys Ala Thr Cys Gly Gly Cys Ala Ala Cys Cys Ala Thr Thr Thr Thr
20 25 30

Gly Thr Thr Cys Cys Ala Thr Gly Cys Cys Gly Cys Thr Thr Cys Gly
35 40 45

Ala Thr Thr Thr Cys Gly Gly Cys Ala Thr Cys Gly Ala Gly Cys Thr
50 55 60

Gly Thr Thr Cys Gly Gly Gly Gly Ala Ala Gly Gly Gly Cys Gly Thr
65 70 75 80

Gly Thr Cys Cys Ala Ala Ala Ala Thr Cys Cys Ala Thr Thr Gly Gly
85 90 95

Cys Gly Gly Ala Thr Thr Thr Cys Thr Thr Thr Gly Cys Cys Gly Ala
100 105 110

Cys Gly Cys Gly Thr Gly Cys Cys Ala Gly Thr Thr Cys Gly Gly Cys

115 120 125
 Ala Ala Cys Gly Thr Cys Thr Thr Cys Gly Ala Cys Ala Thr Cys Thr
 130 135 140
 Ala Ala Thr Thr Thr Thr Gly Cys Cys Ala Gly Thr Gly Cys Gly Gly
 145 150 155 160
 Cys Gly Gly Ala Ala Ala Thr Gly Cys Gly Thr Thr Cys Gly Cys Thr
 165 170 175
 Cys Ala Gly Ala Cys Cys Gly Thr Thr Gly Thr Gly Thr Gly Cys Gly
 180 185 190
 Ala Gly Gly Ala Ala Thr Gly Cys Gly Cys Gly Gly Thr Ala Gly
 195 200 205

<210> 1355
 <211> 360
 <212> DNA
 <213> *Neisseria gonorrhoeae*

<400> 1355
 atggcgcggt cgttgtagag ggaggcgaaa acgtggcgca tcgctttttt aacgttatcc 60
 aagccattga tattcaggaa ggtttcctgt tggccggcaa atgatgcgtc gggcaggtct 120
 tcggcggttg cggaagagcg tacggcaacg gaaatgtccg cgccgtcggc atcggtatc 180
 attttgttcc atgccgcttc gatttcggca tcgagctgtt cggggaaggg cgtgtccaaa 240
 atccattggc ggatttcctt gccgacgcgt gccagttcgg aaacgtcttc gacatccaat 300
 tttgccagag cggcggaat gcgttcgttc agaccgttgt gtgcgagaaa tgcgcggtag 360

<210> 1356
 <211> 119
 <212> PRT
 <213> *Neisseria gonorrhoeae*

<400> 1356
 Met Ala Arg Ser Leu Tyr Arg Glu Ala Lys Thr Trp Arg Ile Ala Phe
 1 5 10 15
 Leu Thr Leu Ser Lys Pro Leu Ile Phe Arg Lys Val Ser Cys Trp Pro
 20 25 30
 Ala Asn Asp Ala Ser Gly Arg Ser Ser Ala Val Ala Glu Glu Arg Thr
 35 40 45
 Ala Thr Glu Met Ser Ala Pro Ser Ala Ser Val Ile Ile Leu Phe His
 50 55 60
 Ala Ala Ser Ile Ser Ala Ser Ser Cys Ser Gly Lys Gly Val Ser Lys
 65 70 75 80
 Ile His Trp Arg Ile Ser Leu Pro Thr Arg Ala Ser Ser Glu Thr Ser
 85 90 95

Ser Thr Ser Asn Phe Ala Arg Ala Ala Glu Met Arg Ser Phe Arg Pro
100 105 110

Leu Cys Ala Arg Asn Ala Arg
115

<210> 1357
<211> 360
<212> DNA
<213> Neisseria meningitidis

<400> 1357
atggcacggt cgttatacag ggaagcgaat acatgggtgca tcgcttcttt aacgttatcc 60
aagccgttga tgttcaagaa ggtttcctgt tgtccagcga atgatgcgtc cggcaggtct 120
tcggcagttg cggaagaacg tacggcaacg gaaatgtccg caccgccggc atcggcaacc 180
atattgttcc atgccgcttc gatttcggca tcgagctgtt cggggaaagg cgtatccaaa 240
atccattggc ggatttcttt gccgacgcgt gccagttcgg caacgtcttc gacatccaat 300
tttggcagtg cggcgggaaat gcgttcgctc agaccgttgt gtgcgaggaa tgcgcggtag 360

<210> 1358
<211> 119
<212> PRT
<213> Neisseria meningitidis

<400> 1358
Met Ala Arg Ser Leu Tyr Arg Glu Ala Asn Thr Trp Cys Ile Ala Ser
1 5 10 15

Leu Thr Leu Ser Lys Pro Leu Met Phe Lys Lys Val Ser Cys Cys Pro
20 25 30

Ala Asn Asp Ala Ser Gly Arg Ser Ser Ala Val Ala Glu Glu Arg Thr
35 40 45

Ala Thr Glu Met Ser Ala Pro Pro Ala Ser Ala Thr Ile Leu Phe His
50 55 60

Ala Ala Ser Ile Ser Ala Ser Ser Cys Ser Gly Lys Gly Val Ser Lys
65 70 75 80

Ile His Trp Arg Ile Ser Leu Pro Thr Arg Ala Ser Ser Ala Thr Ser
85 90 95

Ser Thr Ser Asn Phe Ala Ser Ala Ala Glu Met Arg Ser Leu Arg Pro
100 105 110

Leu Cys Ala Arg Asn Ala Arg
115

<210> 1359
<211> 360
<212> DNA
<213> Neisseria meningitidis

<400> 1359

```
atggcgcggt cgttgtagag ggaggcgaat acatggcgca tcgcttcttt aacgttttcc 60
aagccgttga tattcaggaa ggtttcctgt tggccggcaa atgatgcgtc gggcaggtct 120
tcggcgggtt cggaagagcg tacggcaacg gaaatgtccg cggcgccggc atcggcaacc 180
attttgttcc atgccgcttc gatttcggca tcgagctgtt cggggaaggg cgtgtccaaa 240
atccattggc ggatttcttt gccgacgcgt gccagttcgg caacgtcttc gacatctaata 300
tttgccagtg cggcggaat gcgttcgctc agaccgttgt gtgcgaggaa tgcgcggtag 360
```

<210> 1360

<211> 119

<212> PRT

<213> *Neisseria meningitidis*

<400> 1360

```
Met Ala Arg Ser Leu Tyr Arg Glu Ala Asn Thr Trp Arg Ile Ala Ser
  1             5             10             15
```

```
Leu Thr Phe Ser Lys Pro Leu Ile Phe Arg Lys Val Ser Cys Trp Pro
      20             25             30
```

```
Ala Asn Asp Ala Ser Gly Arg Ser Ser Ala Val Ala Glu Glu Arg Thr
      35             40             45
```

```
Ala Thr Glu Met Ser Ala Pro Pro Ala Ser Ala Thr Ile Leu Phe His
      50             55             60
```

```
Ala Ala Ser Ile Ser Ala Ser Ser Cys Ser Gly Lys Gly Val Ser Lys
      65             70             75             80
```

```
Ile His Trp Arg Ile Ser Leu Pro Thr Arg Ala Ser Ser Ala Thr Ser
      85             90             95
```

```
Ser Thr Ser Asn Phe Ala Ser Ala Ala Glu Met Arg Ser Leu Arg Pro
      100            105            110
```

```
Leu Cys Ala Arg Asn Ala Arg
      115
```

<210> 1361

<211> 1278

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1361

```
atgttggttc aggacttgcc ttttgaagtc aaactgaaaa aattccatat cgattttttac 60
aatacgggta tgccgcgcga ttttgccagc gatattgaag taacggacaa ggcaaccggt 120
gagaaactcg agcgacccat ccgcgtgaac catcctttga ccttgcaagg catcacgatt 180
tatcaggcga gttttgccga cggcgggttcg gatttgacat tcaaggcgtg gaatttgagg 240
gatgcttcgc gcgaacctgt cgtgttgaag gcaacctcca tacaccagtt tccgttgga 300
atcggcaaac acaaatatcg tcttgagttc gatcagttca cttctatgaa tgtggaggac 360
atgagcgagg gtgcggaacg ggaaaaaagc ctgaaatcca ctctgaacga tgtccgcgcc 420
gttactcagg aaggtaaaaa atacaccaat atcggccctt ccatcgtgta ccgcatccgt 480
gatgcggcag gcagggcggg cgaatataaa aactatatgc tgccgatttt gcaggacaaa 540
gattattttt ggctgaccgg cacgcgcagc ggcttgagc agcaataccg ctggctgcgt 600
atccccttgg acaagcagtt gaaagcggac acctttatgg cattgcgtga gtttttgaaa 660
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gatggggaag ggcgcaaacg tctggttgcc gacgcaacca aagacgcacc tgccgaaatc 720
cgcgaaacaat tcatgctggc tgcggaaaac acgctgaata tctttgcgca aaaaggctat 780
ttgggatttg acgaatttat tacgtccaat atcccgaag ggcagcagga taagatgcag 840
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cggtacggct tgcccgaatg gcagcaggat gaagcgcgga accgtttcct gctgcacagt 960
atggatgcct atacggggct gacggaatat cccgcgccta tgctgctcca gcttgacggg 1020
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tatctcggct cggattattgtt ggttttgggt acagtattta tgttttatgt gcccaaaaaa 1140
cgggcgtggg tattgttttc aaacdgc aaa atccgttttg ctatgtcttc ggccgcgagc 1200
gaacgggatt tgcagaagga atttcacaaa cacgtcgaga gcctgcaacg gctcggcaag 1260
gacttgaatc atgactga                                     1278

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<210> 1362

<211> 424

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1362

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Met Leu Val Gln Asp Leu Pro Phe Glu Val Lys Leu Lys Lys Phe His
 1              5              10              15

Ile Asp Phe Tyr Asn Thr Gly Met Pro Arg Asp Phe Ala Ser Asp Ile
      20              25              30

Glu Val Thr Asp Lys Ala Thr Gly Glu Lys Leu Glu Arg Thr Ile Arg
      35              40              45

Val Asn His Pro Leu Thr Leu His Gly Ile Thr Ile Tyr Gln Ala Ser
 50              55              60

Phe Ala Asp Gly Gly Ser Asp Leu Thr Phe Lys Ala Trp Asn Leu Arg
 65              70              75              80

Asp Ala Ser Arg Glu Pro Val Val Leu Lys Ala Thr Ser Ile His Gln
      85              90              95

Phe Pro Leu Glu Ile Gly Lys His Lys Tyr Arg Leu Glu Phe Asp Gln
     100              105              110

Phe Thr Ser Met Asn Val Glu Asp Met Ser Glu Gly Ala Glu Arg Glu
     115              120              125

Lys Ser Leu Lys Ser Thr Leu Asn Asp Val Arg Ala Val Thr Gln Glu
     130              135              140

Gly Lys Lys Tyr Thr Asn Ile Gly Pro Ser Ile Val Tyr Arg Ile Arg
     145              150              155              160

Asp Ala Ala Gly Gln Ala Val Glu Tyr Lys Asn Tyr Met Leu Pro Ile
     165              170              175

Leu Gln Asp Lys Asp Tyr Phe Trp Leu Thr Gly Thr Arg Ser Gly Leu
     180              185              190

Gln Gln Gln Tyr Arg Trp Leu Arg Ile Pro Leu Asp Lys Gln Leu Lys

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195					200					205					
Ala	Asp	Thr	Phe	Met	Ala	Leu	Arg	Glu	Phe	Leu	Lys	Asp	Gly	Glu	Gly
210					215					220					
Arg	Lys	Arg	Leu	Val	Ala	Asp	Ala	Thr	Lys	Asp	Ala	Pro	Ala	Glu	Ile
225					230					235					240
Arg	Glu	Gln	Phe	Met	Leu	Ala	Ala	Glu	Asn	Thr	Leu	Asn	Ile	Phe	Ala
				245					250					255	
Gln	Lys	Gly	Tyr	Leu	Gly	Leu	Asp	Glu	Phe	Ile	Thr	Ser	Asn	Ile	Pro
			260					265					270		
Lys	Gly	Gln	Gln	Asp	Lys	Met	Gln	Gly	Tyr	Phe	Tyr	Glu	Met	Leu	Tyr
		275					280					285			
Gly	Val	Met	Asn	Ala	Ala	Leu	Asp	Glu	Thr	Ile	Arg	Arg	Tyr	Gly	Leu
	290					295					300				
Pro	Glu	Trp	Gln	Gln	Asp	Glu	Ala	Arg	Asn	Arg	Phe	Leu	Leu	His	Ser
305					310					315					320
Met	Asp	Ala	Tyr	Thr	Gly	Leu	Thr	Glu	Tyr	Pro	Ala	Pro	Met	Leu	Leu
				325					330					335	
Gln	Leu	Asp	Gly	Phe	Ser	Glu	Val	Arg	Ser	Ser	Gly	Leu	Gln	Met	Thr
			340					345					350		
Arg	Ser	Pro	Gly	Ala	Leu	Leu	Val	Tyr	Leu	Gly	Ser	Val	Leu	Leu	Val
		355					360					365			
Leu	Gly	Thr	Val	Phe	Met	Phe	Tyr	Val	Pro	Lys	Lys	Arg	Ala	Trp	Val
	370					375					380				
Leu	Phe	Ser	Asn	Lys	Ile	Arg	Phe	Ala	Met	Ser	Ser	Ala	Arg	Ser	Glu
385					390					395					400
Arg	Asp	Leu	Gln	Lys	Glu	Phe	Pro	Lys	His	Val	Glu	Ser	Leu	Gln	Arg
				405					410					415	
Leu	Gly	Lys	Asp	Leu	Asn	His	Asp								
			420												

<210> 1363

<211> 1274

<212> DNA

<213> Neisseria meningitidis

<400> 1363

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gagaaactcg agcgacccat ccgcgtgaac catcctttga ccttgacagg catcacgatt 180
tatcaggcga gttttgccga cggcggttcg gatttgacat tcaaggcgtg gaatttgggt 240
gatgcttcgc gcgagcctgt cgtgttgaag gcaacatcca tacaccagtt tccgttggaa 300
attggcaaac acaaatatcg tcttgagttc gatcagttca cttctatgaa tgtggaggac 360

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atgagcgagg ggcggaacg ggaaaaaagc ctgaaatcca cgctgmmcga tgtccgcgcc 420
gttactcagg aaggtaaaaa atacaccaat atcgccctt ccattgttta ccgtatccgt 480
gatgcggcag ggcaggcggg cgaatataaa aactatatgc tgccggtttt gcaggaacag 540
gattatTTTT ggattaccgg cagcgcagc ggcttgcagc agcaataccg ctggctgcgt 600
atcccttg acaagcagtt gaaagcggac acccttatgg cattgcgtga gtttttga 660
gatggggaag ggcgcaaacg tctggttgcc gacgcaacca aaggcgcacc tgccgaaatc 720
cgcgaaacaat tcatgctggc tgcggaaaac acgctgaaca tctttgcaca aaaaggctat 780
ttgggattgg acgaatttat tacgtccaat atcccgaaag agcagcagga taagatgcag 840
ggctatttct acgaaatgct ttacggcgtg atgaacgctg ctttggatga aaccatacgc 900
cggtagcggt tgcccgaatg gcagcaggat gaagcgcgga atcgtttcct gctgcacagt 960
atggatgcgt acacgggttt gaccgaatat cccgcgccta tgctgctgca acttgatggg 1020
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cgggcgtggg tattgttttc agacggcaaa atccgttttg ccatgtcttc ggccgcagc 1200
gaacgggatt tgcagaagga atttccaaaa cacgtcgaga gtctgcaacg gctcggcaag 1260
gacttgaatc atga 1274

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<210> 1364

<211> 425

<212> PRT

<213> *Neisseria meningitidis*

<400> 1364

```

Ile Leu Val Gln Asp Leu Pro Phe Glu Val Lys Leu Lys Lys Phe His
  1                      5                      10                      15

```

```

Ile Asp Phe Tyr Asn Thr Gly Met Pro Arg Asp Phe Ala Ser Asp Ile
      20                      25                      30

```

```

Glu Val Thr Asp Lys Ala Thr Gly Glu Lys Leu Glu Arg Thr Ile Arg
      35                      40                      45

```

```

Val Asn His Pro Leu Thr Leu His Gly Ile Thr Ile Tyr Gln Ala Ser
      50                      55                      60

```

```

Phe Ala Asp Gly Gly Ser Asp Leu Thr Phe Lys Ala Trp Asn Leu Gly
      65                      70                      75                      80

```

```

Asp Ala Ser Arg Glu Pro Val Val Leu Lys Ala Thr Ser Ile His Gln
      85                      90                      95

```

```

Phe Pro Leu Glu Ile Gly Lys His Lys Tyr Arg Leu Glu Phe Asp Gln
      100                     105                     110

```

```

Phe Thr Ser Met Asn Val Glu Asp Met Ser Glu Gly Ala Glu Arg Glu
      115                     120                     125

```

```

Lys Ser Leu Lys Ser Thr Leu Xaa Asp Val Arg Ala Val Thr Gln Glu
      130                     135                     140

```

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Gly Lys Lys Tyr Thr Asn Ile Gly Pro Ser Ile Val Tyr Arg Ile Arg
      145                     150                     155                     160

```

```

Asp Ala Ala Gly Gln Ala Val Glu Tyr Lys Asn Tyr Met Leu Pro Val
      165                     170                     175

```

Leu Gln Glu Gln Asp Tyr Phe Trp Ile Thr Gly Thr Arg Ser Gly Leu
 180 185 190
 Gln Gln Gln Tyr Arg Trp Leu Arg Ile Pro Leu Asp Lys Gln Leu Lys
 195 200 205
 Ala Asp Thr Phe Met Ala Leu Arg Glu Phe Leu Lys Asp Gly Glu Gly
 210 215 220
 Arg Lys Arg Leu Val Ala Asp Ala Thr Lys Gly Ala Pro Ala Glu Ile
 225 230 235 240
 Arg Glu Gln Phe Met Leu Ala Ala Glu Asn Thr Leu Asn Ile Phe Ala
 245 250 255
 Gln Lys Gly Tyr Leu Gly Leu Asp Glu Phe Ile Thr Ser Asn Ile Pro
 260 265 270
 Lys Glu Gln Gln Asp Lys Met Gln Gly Tyr Phe Tyr Glu Met Leu Tyr
 275 280 285
 Gly Val Met Asn Ala Ala Leu Asp Glu Thr Ile Arg Arg Tyr Gly Leu
 290 295 300
 Pro Glu Trp Gln Gln Asp Glu Ala Arg Asn Arg Phe Leu Leu His Ser
 305 310 315 320
 Met Asp Ala Tyr Thr Gly Leu Thr Glu Tyr Pro Ala Pro Met Leu Leu
 325 330 335
 Gln Leu Asp Gly Phe Ser Glu Val Arg Ser Ser Gly Leu Gln Met Thr
 340 345 350
 Arg Ser Pro Gly Ala Leu Leu Val Tyr Leu Gly Ser Val Leu Leu Val
 355 360 365
 Leu Gly Thr Val Leu Met Phe Tyr Val Arg Glu Lys Arg Ala Trp Val
 370 375 380
 Leu Phe Ser Asp Gly Lys Ile Arg Phe Ala Met Ser Ser Ala Arg Ser
 385 390 395 400
 Glu Arg Asp Leu Gln Lys Glu Phe Pro Lys His Val Glu Ser Leu Gln
 405 410 415
 Arg Leu Gly Lys Asp Leu Asn His Asp
 420 425

<210> 1365

<211> 1278

<212> DNA

<213> *Neisseria meningitidis*

<400> 1365

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 aatacgggta tgccgcgcga ttttgccagt gatattgaag taacggataa ggcaaccggt 120

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gagaaactcg agcgcacccat ccgcgtgaac catcctttga ccttgccacgg catcacgatt 180
tatcaggcga gttttgccga cggcgggttcg gatttgacat tcaaggcgtg gaatttggtt 240
gatgcttcgc gcgagcctgt cgtgttgaag gcaacatcca tacaccagtt tccgttggaa 300
attggcaaac acaaatatcg tcttgagttc gatcagttta cttctatgaa tgtggaggac 360
atgagcgagg gcgcggaacg ggaaaaaagc ctgaaatcca cgctgaacga tgtccgcgcc 420
gttactcagg aaggtaaaaa atacaccaat atcggccctt ccattgttta ccgtatccgt 480
gatgcggcag ggcaggcggg cgaatataaa aactatatgc tgccggtttt gcaggaaacag 540
gattattttt ggattaccgg cacgcgcagc ggcttgacgc agcaataccg ctggctgcgt 600
atccccttgg acaagcagtt gaaagcggac acctttatgg cattgcgtga gtttttgaaa 660
gatggggaag ggcgcaaacg tctggttgcc gacgcaacca aaggcgcacc tgccgaaatc 720
cgcgaaacaat tcatgctggc tgcggaaaac acgctgaaca tctttgcaca aaaaggctat 780
ttgggattgg acgaatttat tacgtccaat atcccgaaag agcagcagga taagatgcag 840
ggctatttct acgaaatgct ttacggcgtg atgaacgctg ctttgatga aaccatacgc 900
cggtagcggt tgcccgaatg gcagcaggat gaagcgcgga atcgtttcct gctgcacagt 960
atggatgcgt acacggggtt gaccgaatat cccgcgccta tgctgctgca acttgatggg 1020
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tatctcggct cgggtgctgtt ggtattgggt acggtattga tgttttatgt gcgcgaaaaa 1140
cgggcgtggg tattgttttc agacggcaaa atccggtttg ccatgtcttc ggccgcagc 1200
gaacgggatt tgcagaagga atttccaaaa cacgtcgaga gtctgcaacg gctcggcaag 1260
gacttgaatc atgactga
1278

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<210> 1366
 <211> 425
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 1366
 Ile Leu Val Gln Asp Leu Pro Phe Glu Val Lys Leu Lys Lys Phe His
 1 5 10 15
 Ile Asp Phe Tyr Asn Thr Gly Met Pro Arg Asp Phe Ala Ser Asp Ile
 20 25 30
 Glu Val Thr Asp Lys Ala Thr Gly Glu Lys Leu Glu Arg Thr Ile Arg
 35 40 45
 Val Asn His Pro Leu Thr Leu His Gly Ile Thr Ile Tyr Gln Ala Ser
 50 55 60
 Phe Ala Asp Gly Gly Ser Asp Leu Thr Phe Lys Ala Trp Asn Leu Gly
 65 70 75 80
 Asp Ala Ser Arg Glu Pro Val Val Leu Lys Ala Thr Ser Ile His Gln
 85 90 95
 Phe Pro Leu Glu Ile Gly Lys His Lys Tyr Arg Leu Glu Phe Asp Gln
 100 105 110
 Phe Thr Ser Met Asn Val Glu Asp Met Ser Glu Gly Ala Glu Arg Glu
 115 120 125
 Lys Ser Leu Lys Ser Thr Leu Asn Asp Val Arg Ala Val Thr Gln Glu
 130 135 140
 Gly Lys Lys Tyr Thr Asn Ile Gly Pro Ser Ile Val Tyr Arg Ile Arg

145		150		155		160									
Asp	Ala	Ala	Gly	Gln	Ala	Val	Glu	Tyr	Lys	Asn	Tyr	Met	Leu	Pro	Val
			165						170					175	
Leu	Gln	Glu	Gln	Asp	Tyr	Phe	Trp	Ile	Thr	Gly	Thr	Arg	Ser	Gly	Leu
			180					185					190		
Gln	Gln	Gln	Tyr	Arg	Trp	Leu	Arg	Ile	Pro	Leu	Asp	Lys	Gln	Leu	Lys
			195				200					205			
Ala	Asp	Thr	Phe	Met	Ala	Leu	Arg	Glu	Phe	Leu	Lys	Asp	Gly	Glu	Gly
	210					215					220				
Arg	Lys	Arg	Leu	Val	Ala	Asp	Ala	Thr	Lys	Gly	Ala	Pro	Ala	Glu	Ile
225				230						235					240
Arg	Glu	Gln	Phe	Met	Leu	Ala	Ala	Glu	Asn	Thr	Leu	Asn	Ile	Phe	Ala
			245						250					255	
Gln	Lys	Gly	Tyr	Leu	Gly	Leu	Asp	Glu	Phe	Ile	Thr	Ser	Asn	Ile	Pro
			260					265					270		
Lys	Glu	Gln	Gln	Asp	Lys	Met	Gln	Gly	Tyr	Phe	Tyr	Glu	Met	Leu	Tyr
		275					280					285			
Gly	Val	Met	Asn	Ala	Ala	Leu	Asp	Glu	Thr	Ile	Arg	Arg	Tyr	Gly	Leu
	290					295					300				
Pro	Glu	Trp	Gln	Gln	Asp	Glu	Ala	Arg	Asn	Arg	Phe	Leu	Leu	His	Ser
305				310						315					320
Met	Asp	Ala	Tyr	Thr	Gly	Leu	Thr	Glu	Tyr	Pro	Ala	Pro	Met	Leu	Leu
				325					330					335	
Gln	Leu	Asp	Gly	Phe	Ser	Glu	Val	Arg	Ser	Ser	Gly	Leu	Gln	Met	Thr
		340						345					350		
Arg	Ser	Pro	Gly	Ala	Leu	Leu	Val	Tyr	Leu	Gly	Ser	Val	Leu	Leu	Val
		355					360					365			
Leu	Gly	Thr	Val	Leu	Met	Phe	Tyr	Val	Arg	Glu	Lys	Arg	Ala	Trp	Val
	370					375					380				
Leu	Phe	Ser	Asp	Gly	Lys	Ile	Arg	Phe	Ala	Met	Ser	Ser	Ala	Arg	Ser
385					390					395					400
Glu	Arg	Asp	Leu	Gln	Lys	Glu	Phe	Pro	Lys	His	Val	Glu	Ser	Leu	Gln
			405						410					415	
Arg	Leu	Gly	Lys	Asp	Leu	Asn	His	Asp							
		420						425							

<210> 1367

<211> 894

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1367

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cggctcggac atctggcggt ttacctttta aaggaagacc gcgcgcgcat cgtcgccaat 180
atgcggcagg cgggtttgaa ccccgacacg cagacgggtca aagccgtttt tgcggaaacg 240
gcaaaatgcg gtttggaact tgccccgcg tttttcaaaa aaccggaaga catcgaaaca 300
atgttcaaag cgggtacacg ctgggaacac gtgcagcagg ctttggaaca gggcgaaggg 360
ctgctgttca tcacgcgcga catcggcagc tacgatttgg gcggacgcta catcagccag 420
cagcttccgt tccacctgac cgccatgtac aagccgcgca aaatcaaagc gatagacaaa 480
atcatgcagg cgggcagggt gcgcggcaaa ggcaaaaccg cgcccaccgg catacaaggg 540
gtcaaacaaa tcatcaaggc cctgcgcgcg ggcgaggcaa ccatcctcct gcccgaccac 600
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tgcaacgcc tgcccgcg acaaggcttc gtgttgaca tccgccccgt ccaaggggaa 780
ttgaacggca acaaagcca cgatgcgcgc gtgttcaacc gcaataccga atattggata 840
cgccgttttc cgacgcagta tctgtttatg tacaaccgct ataaaacgcc gtaa 894
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<210> 1368

<211> 297

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1368

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Met Phe Arg Leu Gln Phe Arg Leu Phe Pro Pro Leu Arg Thr Ala Met
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His Ile Leu Leu Thr Ala Leu Leu Lys Cys Leu Ser Leu Leu Ser Leu
    20             25             30

Ser Cys Leu His Thr Leu Gly Asn Arg Leu Gly His Leu Ala Phe Tyr
    35             40             45

Leu Leu Lys Glu Asp Arg Ala Arg Ile Val Ala Asn Met Arg Gln Ala
    50             55             60

Gly Leu Asn Pro Asp Thr Gln Thr Val Lys Ala Val Phe Ala Glu Thr
    65             70             75             80

Ala Lys Cys Gly Leu Glu Leu Ala Pro Ala Phe Phe Lys Lys Pro Glu
    85             90             95

Asp Ile Glu Thr Met Phe Lys Ala Val His Gly Trp Glu His Val Gln
   100             105             110

Gln Ala Leu Asp Lys Gly Glu Gly Leu Leu Phe Ile Thr Pro His Ile
   115             120             125

Gly Ser Tyr Asp Leu Gly Gly Arg Tyr Ile Ser Gln Gln Leu Pro Phe
   130             135             140

His Leu Thr Ala Met Tyr Lys Pro Pro Lys Ile Lys Ala Ile Asp Lys
   145             150             155             160
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Ile	Met	Gln	Ala	Gly	Arg	Val	Arg	Gly	Lys	Gly	Lys	Thr	Ala	Pro	Thr		
				165					170					175			
Gly	Ile	Gln	Gly	Val	Lys	Gln	Ile	Ile	Lys	Ala	Leu	Arg	Ala	Gly	Glu		
			180					185					190				
Ala	Thr	Ile	Ile	Leu	Pro	Asp	His	Val	Pro	Ser	Pro	Gln	Glu	Gly	Gly		
		195					200					205					
Gly	Val	Trp	Ala	Asp	Phe	Phe	Gly	Lys	Pro	Ala	Tyr	Thr	Met	Thr	Leu		
	210					215					220						
Ala	Ala	Lys	Leu	Ala	His	Val	Lys	Gly	Val	Lys	Thr	Leu	Phe	Phe	Cys		
225					230					235					240		
Cys	Glu	Arg	Leu	Pro	Asp	Gly	Gln	Gly	Phe	Val	Leu	His	Ile	Arg	Pro		
			245						250					255			
Val	Gln	Gly	Glu	Leu	Asn	Gly	Asn	Lys	Ala	His	Asp	Ala	Ala	Val	Phe		
		260						265					270				
Asn	Arg	Asn	Thr	Glu	Tyr	Trp	Ile	Arg	Arg	Phe	Pro	Thr	Gln	Tyr	Leu		
	275						280					285					
Phe	Met	Tyr	Asn	Arg	Tyr	Lys	Thr	Pro									
	290					295											

<210> 1369
 <211> 866
 <212> DNA
 <213> Neisseria meningitidis

<400> 1369
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 aaccggctcg gacatctggc gttttacctt ttaaaggaag accgcgcgcg catcgctgcc 180
 aatatgcggc aggcgggttt gaaccccgac cccaaaacgg tcaaagccgt ttttgcgga 240
 acggcaaaaag gcggtttgga acttgcccc gcgtttttca gaaaaccgga agacatagaa 300
 acaatgttca aagcgggtaca cggctgggaa catgtgcagc aggctttgga caaacacgaa 360
 gggctgctat tcatcacgcc gcacatcggc agctacgatt tgggcggacg ctacatcagc 420
 cagcagcttc cgttcccgt gaccgccatg taaaaccgc cgaaaatcaa agcgatagac 480
 aaaatcatgc aggcgggcag ggttcgcgjc aaaggaaaaa ccgcgcctac cagcatacaa 540
 ggggtcaaac aaatcatcaa agccctgcgt tcgggcgagc aaccatcgtc ctgcccgacc 600
 acgtcccctc ccctcaagaa ggcggggaag gcgtatgggt ggatttcttc ggcaaacctg 660
 cctataccat gacgtggcg gcaarattgg cacacgtcaa aggcgtgaaa accctgtttt 720
 tctgctgca acgcctgcct ggcgacaag gtttcgattt gcacatccgc cccgtccaag 780
 ggggaattgaa cggcgacaaa gcccatgatg ccgcctgttt caaccgcaat gccgaatatt 840
 ggatacgccg tttccgacg catatc 866

<210> 1370
 <211> 288
 <212> PRT
 <213> Neisseria meningitidis

<400> 1370

Met 1	Phe	Arg	Leu	Gln 5	Phe	Arg	Leu	Phe	Pro 10	Pro	Leu	Arg	Thr	Ala	Met 15
His	Ile	Leu	Leu 20	Thr	Ala	Leu	Leu	Lys 25	Cys	Leu	Ser	Leu	Leu 30	Pro	Leu
Ser	Cys	Leu 35	His	Thr	Leu	Gly	Asn 40	Arg	Leu	Gly	His	Leu 45	Ala	Phe	Tyr
Leu 50	Leu	Lys	Glu	Asp	Arg	Ala 55	Arg	Ile	Val	Ala	Asn 60	Met	Arg	Gln	Ala
Gly 65	Leu	Asn	Pro	Asp 70	Pro	Lys	Thr	Val	Lys	Ala 75	Val	Phe	Ala	Glu	Thr 80
Ala	Lys	Gly	Gly	Leu 85	Glu	Leu	Ala	Pro	Ala 90	Phe	Phe	Arg	Lys	Pro 95	Glu
Asp	Ile	Glu	Thr 100	Met	Phe	Lys	Ala	Val 105	His	Gly	Trp	Glu	His	Val	Gln
Gln	Ala	Leu 115	Asp	Lys	His	Glu	Gly 120	Leu	Leu	Phe	Ile	Thr 125	Pro	His	Ile
Gly 130	Ser	Tyr	Asp	Leu	Gly	Gly 135	Arg	Tyr	Ile	Ser	Gln 140	Gln	Leu	Pro	Phe
Pro 145	Leu	Thr	Ala	Met 150	Tyr	Lys	Pro	Pro	Lys	Ile 155	Lys	Ala	Ile	Asp	Lys 160
Ile	Met	Gln	Ala	Gly 165	Arg	Val	Arg	Gly	Lys 170	Gly	Lys	Thr	Ala	Pro 175	Thr
Ser	Ile	Gln	Gly 180	Val	Lys	Gln	Ile	Ile 185	Lys	Ala	Leu	Arg	Ser	Gly	Glu
Ala	Thr	Ile 195	Val	Leu	Pro	Asp	His 200	Val	Pro	Ser	Pro	Gln 205	Glu	Gly	Gly
Glu 210	Gly	Val	Trp	Val	Asp	Phe 215	Phe	Gly	Lys	Pro	Ala 220	Tyr	Thr	Met	Thr
Leu 225	Ala	Ala	Xaa	Leu	Ala 230	His	Val	Lys	Gly	Val 235	Lys	Thr	Leu	Phe	Phe 240
Cys	Cys	Glu	Arg	Leu 245	Pro	Gly	Gly	Gln	Gly 250	Phe	Asp	Leu	His	Ile	Arg
Pro	Val	Gln	Gly 260	Glu	Leu	Asn	Gly	Asp 265	Lys	Ala	His	Asp	Ala 270	Ala	Val
Phe	Asn	Arg 275	Asn	Ala	Glu	Tyr	Trp 280	Ile	Arg	Arg	Phe	Pro 285	Thr	His	Ile

<210> 1371
 <211> 897
 <212> DNA
 <213> *Neisseria meningitidis*

<400> 1371
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 cggctcggac atctggcggt ttacctttta aaggaagacc gcgcgcgcat cgtcgccaat 180
 atgcgtcagg caggcatgaa tcccgaaccc aaaacgggtca aagccgtttt tgcggaaacg 240
 gcaaaaggcg gtttggaact tgcccccgcg tttttcagaa aaccggaaga catagaaaca 300
 atgttcaaag cggtagacgg ctgggaacat gtgcagcagg ctttggaaca acacgaaggg 360
 ctgctattca tcacgccgca catcggcagc tacgatttgg gcggacgcta catcagccag 420
 cagcttccgt tcccgtgtac cgccatgtac aaaccgccga aaatcaaagc gatagacaaa 480
 atcatgcagg cgggcagggt tcgcggcaaa ggaaaaaccg cgctaccag catacaaggg 540
 gtcaaacaaa tcatcaaagc cctgcgttcg ggcgaagcaa ccatcgtcct gcccgaccac 600
 gtccccctccc ctcaagaagg cggggaaggc gtatgggtgg atttcttcgg caaacctgcc 660
 tataccatga cgctggcggc aaaattggca cacgtcaaag gcgtgaaaac cctgtttttc 720
 tgctgcgaac gcctgcctgg cggacaaggt ttcgatttgc acatccgccc cgtccaaggg 780
 gaattgaacg gcgacaaagc ccatgatgcc gccgtgttca accgcaatgc cgaatattgg 840
 atacgccgtt ttccgacgca gtatctgttt atgtacaacc gctacaaaat gccgtaa 897

<210> 1372
 <211> 298
 <212> PRT
 <213> *Neisseria meningitidis*

<400> 1372
 Met Phe Arg Leu Gln Phe Arg Leu Phe Pro Pro Leu Arg Thr Ala Met
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 Ser Cys Leu His Thr Leu Gly Asn Arg Leu Gly His Leu Ala Phe Tyr
 35 40 45
 Leu Leu Lys Glu Asp Arg Ala Arg Ile Val Ala Asn Met Arg Gln Ala
 50 55 60
 Gly Met Asn Pro Asp Pro Lys Thr Val Lys Ala Val Phe Ala Glu Thr
 65 70 75 80
 Ala Lys Gly Gly Leu Glu Leu Ala Pro Ala Phe Phe Arg Lys Pro Glu
 85 90 95
 Asp Ile Glu Thr Met Phe Lys Ala Val His Gly Trp Glu His Val Gln
 100 105 110
 Gln Ala Leu Asp Lys His Glu Gly Leu Leu Phe Ile Thr Pro His Ile
 115 120 125
 Gly Ser Tyr Asp Leu Gly Gly Arg Tyr Ile Ser Gln Gln Leu Pro Phe
 130 135 140

Pro Leu Thr Ala Met Tyr Lys Pro Pro Lys Ile Lys Ala Ile Asp Lys
 145 150 155 160
 Ile Met Gln Ala Gly Arg Val Arg Gly Lys Gly Lys Thr Ala Pro Thr
 165 170 175
 Ser Ile Gln Gly Val Lys Gln Ile Ile Lys Ala Leu Arg Ser Gly Glu
 180 185 190
 Ala Thr Ile Val Leu Pro Asp His Val Pro Ser Pro Gln Glu Gly Gly
 195 200 205
 Glu Gly Val Trp Val Asp Phe Phe Gly Lys Pro Ala Tyr Thr Met Thr
 210 215 220
 Leu Ala Ala Lys Leu Ala His Val Lys Gly Val Lys Thr Leu Phe Phe
 225 230 235 240
 Cys Cys Glu Arg Leu Pro Gly Gly Gln Gly Phe Asp Leu His Ile Arg
 245 250 255
 Pro Val Gln Gly Glu Leu Asn Gly Asp Lys Ala His Asp Ala Ala Val
 260 265 270
 Phe Asn Arg Asn Ala Glu Tyr Trp Ile Arg Arg Phe Pro Thr Gln Tyr
 275 280 285
 Leu Phe Met Tyr Asn Arg Tyr Lys Met Pro
 290 295

<210> 1373
 <211> 897
 <212> DNA
 <213> Neisseria meningitidis

<400> 1373
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 cggctcggac atctggcgtt ttacctttta aaggaagacc gcgcgcgcacat cgtcgccaat 180
 atgcggcagg cgggtttgaa ccccgacccc aaaacgggtca aagccgtttt tgcggaaacg 240
 gcaaaaggcg gtttggaact tgccccgcg tttttcagaa aaccggaaga catagaaaca 300
 atgttcaaag cgttacacgg ctgggaacat gtgcagcagg ctttggacaa acacgaaggg 360
 ctgctattca tcacgccgca catcggcagc tacgatttgg gcggacgcta catcagccag 420
 cagcttccgt tcccgtgac cgccatgtac aaaccgccga aaatcaaagc gatagacaaa 480
 atcatgcagg cgggcagggt tcgcggcaaa ggaaaaaccg cgcctaccag catacaaggg 540
 gtcaaacaaa tcatcaaagc cctgcgttcg ggcgaagcaa ccatcgtcct gcccgaccac 600
 gtcccctccc ctcaagaagg cggggaaggc gtatgggtgg atttcttcgg caaacctgcc 660
 tataccatga cgctggcggc aaaattggca cactcaaaag gcgtgaaaac cctgtttttc 720
 tgctgcgaac gcctgcctgg cggacaagg ttcgatttgc acatccgccc cgtccaaggg 780
 gaattgaacg gcgacaaagc ccatgatgcc gccgtgttca accgcaatgc cgaatattgg 840
 atacgccgtt ttccgacgca gtatctgttt atgtacaacc gctacaaaat gccgtaa 897

<210> 1374
 <211> 298
 <212> PRT

<213> Neisseria meningitidis

<400> 1374

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			20					25					30			
Ser	Cys	Leu	His	Thr	Leu	Gly	Asn	Arg	Leu	Gly	His	Leu	Ala	Phe	Tyr	
		35					40					45				
Leu	Leu	Lys	Glu	Asp	Arg	Ala	Arg	Ile	Val	Ala	Asn	Met	Arg	Gln	Ala	
	50					55					60					
Gly	Leu	Asn	Pro	Asp	Pro	Lys	Thr	Val	Lys	Ala	Val	Phe	Ala	Glu	Thr	
65					70					75					80	
Ala	Lys	Gly	Gly	Leu	Glu	Leu	Ala	Pro	Ala	Phe	Phe	Arg	Lys	Pro	Glu	
				85					90					95		
Asp	Ile	Glu	Thr	Met	Phe	Lys	Ala	Val	His	Gly	Trp	Glu	His	Val	Gln	
			100					105					110			
Gln	Ala	Leu	Asp	Lys	His	Glu	Gly	Leu	Leu	Phe	Ile	Thr	Pro	His	Ile	
		115					120					125				
Gly	Ser	Tyr	Asp	Leu	Gly	Gly	Arg	Tyr	Ile	Ser	Gln	Gln	Leu	Pro	Phe	
	130					135					140					
Pro	Leu	Thr	Ala	Met	Tyr	Lys	Pro	Pro	Lys	Ile	Lys	Ala	Ile	Asp	Lys	
145					150					155					160	
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			165						170					175		
Ser	Ile	Gln	Gly	Val	Lys	Gln	Ile	Ile	Lys	Ala	Leu	Arg	Ser	Gly	Glu	
		180						185					190			
Ala	Thr	Ile	Val	Leu	Pro	Asp	His	Val	Pro	Ser	Pro	Gln	Glu	Gly	Gly	
		195					200					205				
Glu	Gly	Val	Trp	Val	Asp	Phe	Phe	Gly	Lys	Pro	Ala	Tyr	Thr	Met	Thr	
	210					215					220					
Leu	Ala	Ala	Lys	Leu	Ala	His	Val	Lys	Gly	Val	Lys	Thr	Leu	Phe	Phe	
225				230						235					240	
Cys	Cys	Glu	Arg	Leu	Pro	Gly	Gly	Gln	Gly	Phe	Asp	Leu	His	Ile	Arg	
				245					250					255		
Pro	Val	Gln	Gly	Glu	Leu	Asn	Gly	Asp	Lys	Ala	His	Asp	Ala	Ala	Val	
		260						265					270			
Phe	Asn	Arg	Asn	Ala	Glu	Tyr	Trp	Ile	Arg	Arg	Phe	Pro	Thr	Gln	Tyr	
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Leu Phe Met Tyr Asn Arg Tyr Lys Met Pro
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<210> 1375

<211> 1563

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1375

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caactcgaat tcgccactt caatcagcgg atagttttt ttccggccaaa ctttgggtcaa 540
gtcaaacgga tgataaggca ctttttcggc atcggcttca ggcatgactt ggatgtacat 600
cgtccatttc gggaaactcg cgcgctcgat ggcttcgtac aggtcgcgct gatggctttc 660
gcggtcgctc gcgatgattt ttgcagcttc ttcgttggtc aggtttttta tcccttgctg 720
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acattttatt ttccttttgc aaaaactatg gatgcgatta tacgccaaga ttttcgttat 1563
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<210> 1376

<211> 520

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1376

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Val Val Lys Gln Ser Leu Phe Leu Arg Val Val His Gln Val Glu Gln
  20             25             30

Gly Ala Arg Leu Ala Glu Val Val Val Ile Val Leu Ala Val Val Pro
  35             40             45

Val Cys Arg Val Ala Val Asp Phe Gln Arg Arg Phe Gly Glu Val Gly
  50             55             60
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Leu Leu Leu Pro Leu Ala Glu Ala Val Gly Phe Val Val Arg Gln Ala
 65 70 75 80
 Ala Val Val Ala Val Gly Ala Ala Leu Ser Val Ala Leu Val Ala Val
 85 90 95
 Asn Arg Ala Thr Arg Thr Ile Asp Gly Asp Leu Ala Glu Val His Thr
 100 105 110
 Gln Ala Val Thr Leu Arg Val Gly Val Ile Glu Gln Thr Gly Leu Gln
 115 120 125
 His Phe Ile Arg Ala Arg Ala Asp Thr Gly Asn Glu Val Ala Arg Cys
 130 135 140
 Glu Gly Gly Leu Phe His Ile Gly Glu Glu Val Phe Gly Ile Ala Val
 145 150 155 160
 Gln Leu Glu Phe Ala His Phe Asn Gln Arg Ile Val Phe Phe Arg Pro
 165 170 175
 Asn Phe Gly Gln Val Lys Arg Met Ile Arg His Phe Phe Gly Ile Gly
 180 185 190
 Phe Arg His Asp Leu Asp Val His Arg Pro Phe Arg Glu Leu Ala Ala
 195 200 205
 Leu Asp Gly Phe Val Gln Val Ala Leu Met Ala Phe Ala Val Val Gly
 210 215 220
 Asp Asp Phe Cys Ser Phe Phe Val Gly Gln Val Phe Asn Pro Leu Leu
 225 230 235 240
 Ala Ala Glu Met Glu Phe His Pro Lys Thr Phe Ala Arg Phe Val Pro
 245 250 255
 Glu Ala Val Gly Met Arg Thr Glu Ala Val His Met Ala Val Ala Gly
 260 265 270
 Gly Asn Thr Ala Val Ala His His Asp Gly Asn Leu Val Gln Gly Phe
 275 280 285
 Gly Gln Gln Arg Pro Glu Val Pro Val Val Cys Gly Gly Thr His Ile
 290 295 300
 Gly Ala Arg Ile Ala Phe Asp Gly Phe Val Gln Val Gly Glu Phe Ala
 305 310 315 320
 Arg Val Ala Gln Glu Glu His Gly Arg Val Val Ala Asp His Ile Pro
 325 330 335
 Val Ala Phe Phe Gly Ile Glu Phe Gln Arg Lys Thr Ala Asp Val Ala
 340 345 350
 Phe Arg Ile Gly Cys Ala Ala Leu Ala Cys His Gly Gly Glu Thr Gly
 355 360 365

Glu His Leu Gly Phe Phe Ala Asp Phe Ala Glu Asn Phe Gly Ala Gly
 370 375 380
 Val Phe Gly Asp Val Val Cys Tyr Gly Lys Arg Thr Glu Arg Ala Arg
 385 390 395 400
 Thr Phe Gly Val His Thr Ala Phe Gly Asp Asp Phe Ala His Glu Val
 405 410 415
 Gly Glu Phe Phe Ile Gln Pro Gln Ile Leu Arg Gln Gln Gly Ala Ala
 420 425 430
 Arg Ala Gly Gly Gln Ala Val Leu Ile Val Gly Asn Gly Arg Ala Val
 435 440 445
 Val His Gly Gln Met Gly Tyr Gly Ala Phe Gly Gly Ser His Arg Ser
 450 455 460
 Cys Ser Phe Ser Gln Val Gly Gln Met Gly Gly Lys Arg Leu Thr Val
 465 470 475 480
 Arg Phe Gly Gly Lys Arg Ile Arg Asn Arg Phe Leu Asp Cys Asn Lys
 485 490 495
 Phe Leu Glu Ser Thr Phe Tyr Phe Pro Phe Ala Lys Thr Met Asp Ala
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 Ile Ile Arg Gln Asp Phe Arg Tyr
 515 520

<210> 1377
 <211> 1322
 <212> DNA
 <213> Neisseria meningitidis

<400> 1377
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 gtcacgtct tggcggtagt cccagtgtgc cgcgtcgccg ttgattttca aaggcggttc 180
 ggcgaatcgg ggttggtgct gccattggcc gaagctgtyg gggtcgtagt gcggcaggct 240
 gccgyagttg ccgtcggcgc gcccttgccc gtygcgstgr ttgctgtgaa casggcaacg 300
 cggacgattg acgggaattt ggcggaagtt tacgccc aaa cggtagcgtt gtgcgtcggc 360
 gtaattgaac aaacgcgctt gcagcatttt atctsggctg gcgccgacac cgggaacgag 420
 gttgctcggg gcgaaggcgg attgttcac atcggcgaag aagttttcgg gattgcggtt 480
 ctcaaacgga tgataaggta ctttttcgc gtctgcttca ggcatgactt ggatgtacat 540
 cgtccatttc ggaaactcgc cgcgttcgat ggcttcstat aagtcgcgct gatggctttc 600
 gcggtcgtcg gcgatgattt tggcggcttc ttcgttggtc aggtttttaa tgccttggtg 660
 ggtgcgga aa tggaatttca cccaaaaacg ctgcctgct tcgttccaga agctgtaggt 720
 atgcgaaccg aagccgtgca tatggcggta gccggcggg atgccgcggt cgctcatcac 780
 gatgtaact tgggtgcagt cttcgggcag cagcgtccag aagtcaccag tgtttgtggc 840
 agagcgcata ttggtgcgcg ggtcgcgttt gacggctttg ttcaggtcgg ggaacttacg 900
 cgggtcgcgc aggaagaaca cgggcgtggt gttgccgacc acatcccagt tgccttcttc 960
 ggtataaaat ttcaaggcaa aaccgcggat gtgcggttct gcatcggctg cggcgcgttc 1020
 gcctgccacg gtggtgaaac gggcgaacat ctcggttttt ttgccgactt cgctgaagat 1080

tcctttggcg tgcatacggc gttcggggat gacttcgcgc acgaagtcgg cgagtttttc 1140
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 gatttggcgg aaagcgtatt cgtaaccggt ttcttgattg caataaattt cttgaatcga 1260
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<210> 1378

<211> 520

<212> PRT

<213> Neisseria meningitidis

<400> 1378

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Val Ala Glu Gln Cys Leu Phe Leu Arg Val Val His Gln Val Glu Gln
 20 25 30

Gly Ala Arg Leu Ala Glu Ile Val Val Ile Val Leu Ala Val Val Pro
 35 40 45

Val Cys Arg Val Ala Val Asp Phe Gln Arg Arg Phe Gly Glu Ser Gly
 50 55 60

Leu Leu Leu Pro Leu Ala Glu Ala Val Gly Phe Val Val Arg Gln Ala
 65 70 75 80

Ala Xaa Val Ala Val Gly Ala Ala Leu Pro Val Ala Xaa Xaa Ala Val
 85 90 95

Asn Xaa Ala Thr Arg Thr Ile Asp Gly Asn Leu Ala Glu Val Tyr Ala
 100 105 110

Gln Thr Val Ala Leu Cys Val Gly Val Ile Glu Gln Thr Arg Leu Gln
 115 120 125

His Phe Ile Xaa Ala Gly Ala Asp Thr Gly Asn Glu Val Ala Arg Cys
 130 135 140

Glu Gly Gly Leu Phe His Ile Gly Glu Glu Val Phe Gly Ile Ala Val
 145 150 155 160

Gln Leu Glu Phe Ala His Phe Asn Gln Arg Ile Val Phe Phe Arg Pro
 165 170 175

Asn Phe Gly Gln Val Lys Arg Met Ile Arg Tyr Phe Phe Arg Val Cys
 180 185 190

Phe Arg His Asp Leu Asp Val His Arg Pro Phe Arg Lys Leu Ala Ala
 195 200 205

Phe Asp Gly Phe Xaa Xaa Val Ala Leu Met Ala Phe Ala Val Val Gly
 210 215 220

Asp Asp Phe Gly Gly Phe Phe Val Gly Gln Val Phe Asn Ala Leu Leu
 225 230 235 240

Gly Ala Glu Met Glu Phe His Pro Lys Thr Leu Ala Cys Phe Val Pro
 245 250 255

Glu Ala Val Gly Met Arg Thr Glu Ala Val His Met Ala Val Ala Gly
 260 265 270

Gly Asp Ala Ala Val Ala His His Asp Gly Asn Leu Val Gln Cys Phe
 275 280 285

Gly Gln Gln Arg Pro Glu Val Pro Val Val Cys Gly Arg Ala His Ile
 290 295 300

Gly Ala Arg Val Ala Phe Asp Gly Phe Val Gln Val Gly Glu Leu Thr
 305 310 315 320

Arg Val Ala Gln Glu Glu His Gly Arg Val Val Ala Asp His Ile Pro
 325 330 335

Val Ala Phe Phe Gly Ile Lys Phe Gln Gly Lys Thr Ala Asp Val Ala
 340 345 350

Phe Cys Ile Gly Cys Ala Ala Phe Ala Cys His Gly Gly Glu Thr Gly
 355 360 365

Glu His Leu Gly Phe Phe Ala Asp Phe Ala Glu Asp Phe Gly Ala Gly
 370 375 380

Val Phe Gly Asp Val Val Arg Tyr Gly Lys Arg Thr Glu Arg Ala Arg
 385 390 395 400

Thr Phe Gly Val His Thr Ala Phe Gly Asp Asp Phe Ala His Glu Val
 405 410 415

Gly Glu Phe Phe Ile Gln Pro Gln Ile Leu Arg Gln Gln Arg Ala Ala
 420 425 430

Arg Thr Gly Gly Gln Ala Val Leu Ile Val Gly Asn Arg Arg Ala Val
 435 440 445

Val His Gly Gln Met Gly Tyr Arg Ala Phe Gly Gly Ser His Arg Ser
 450 455 460

Cys Ser Phe Ser Gln Val Gly Gln Met Gly Gly Lys Arg Leu Thr Val
 465 470 475 480

Arg Phe Gly Gly Lys Arg Ile Arg Asn Arg Phe Leu Asp Cys Asn Lys
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Phe Leu Glu Ser Thr Phe Tyr Phe Pro Phe Val Lys Thr Met Asp Ala
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Thr Ile Arg Gln Asp Phe Arg Tyr
 515 520

<210> 1379

<211> 1562
 <212> DNA
 <213> Neisseria meningitidis

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<210> 1380
 <211> 520
 <212> PRT
 <213> Neisseria meningitidis

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 35 40 45
 Val Arg Arg Val Ala Val Asp Phe Gln Arg Arg Phe Gly Glu Val Gly
 50 55 60
 Leu Leu Leu Pro Leu Ala Glu Ala Val Gly Phe Val Val Arg Gln Ala
 65 70 75 80
 Ala Val Val Ala Val Gly Ala Ser Leu Ser Val Ala Leu Val Ala Val
 85 90 95

Asn	Arg	Ala	Thr	Arg	Thr	Val	Asp	Arg	Asp	Leu	Ala	Glu	Val	His	Ala		
			100					105					110				
Gln	Ala	Val	Ala	Leu	Arg	Val	Gly	Val	Ile	Glu	Gln	Thr	Arg	Leu	Gln		
		115					120					125					
His	Phe	Ile	Trp	Ala	Gly	Ala	Asp	Thr	Gly	Asn	Glu	Val	Ala	Arg	Cys		
	130					135					140						
Glu	Gly	Gly	Leu	Phe	His	Ile	Gly	Glu	Glu	Val	Phe	Gly	Ile	Ala	Val		
145					150					155					160		
Gln	Leu	Glu	Phe	Ala	His	Phe	Asn	Gln	Arg	Ile	Val	Phe	Phe	Arg	Pro		
			165						170					175			
Asn	Phe	Gly	Gln	Val	Lys	Arg	Met	Ile	Arg	His	Phe	Phe	Arg	Ile	Gly		
		180						185					190				
Phe	Arg	His	Asp	Leu	Asp	Val	His	Arg	Pro	Phe	Arg	Lys	Leu	Ala	Ala		
		195					200					205					
Leu	Asp	Gly	Phe	Val	Gln	Val	Ala	Leu	Met	Ala	Phe	Thr	Val	Val	Gly		
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225					230					235					240		
Gly	Ala	Glu	Met	Glu	Phe	His	Pro	Lys	Thr	Leu	Ala	Cys	Phe	Val	Pro		
			245						250					255			
Glu	Ala	Val	Gly	Met	Arg	Thr	Glu	Ala	Val	His	Met	Ala	Val	Ala	Gly		
		260						265					270				
Gly	Asp	Ala	Ala	Val	Ala	His	His	Asp	Gly	Asn	Leu	Val	Gln	Cys	Phe		
	275						280					285					
Gly	Gln	Gln	Arg	Pro	Glu	Val	Pro	Val	Val	Cys	Gly	Arg	Ala	His	Ile		
	290					295					300						
Gly	Ala	Arg	Val	Ala	Phe	Asp	Gly	Phe	Val	Gln	Val	Gly	Glu	Leu	Thr		
305					310					315					320		
Arg	Val	Ala	Gln	Glu	Glu	His	Gly	Arg	Val	Val	Ala	Asp	His	Ile	Pro		
			325						330					335			
Val	Ala	Phe	Phe	Gly	Ile	Glu	Leu	Gln	Arg	Lys	Thr	Ala	Asp	Val	Ala		
		340						345					350				
Phe	Cys	Ile	Gly	Cys	Ala	Ala	Phe	Ala	Cys	His	Gly	Gly	Glu	Thr	Gly		
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Glu	His	Leu	Gly	Phe	Phe	Ala	Asp	Phe	Ala	Glu	Asp	Phe	Gly	Ala	Gly		
	370					375					380						
Val	Phe	Gly	Asp	Val	Val	Arg	Tyr	Gly	Lys	Arg	Thr	Glu	Arg	Ala	Arg		
385					390					395					400		

Thr Phe Gly Val His Thr Ala Phe Gly Asp Asp Phe Ala His Glu Val
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 Gly Glu Phe Phe Ile Gln Pro Gln Ile Leu Arg Gln Gln Arg Ala Ala
 420 425 430
 Arg Thr Gly Gly Gln Ala Val Leu Ile Val Gly Asn Arg Arg Ala Val
 435 440 445
 Val His Gly Gln Met Gly Tyr Arg Ala Phe Gly Gly Xaa His Arg Ser
 450 455 460
 Cys Ser Phe Ser Gln Val Gly Gln Xaa Gly Gly Lys Arg Leu Thr Val
 465 470 475 480
 Arg Phe Gly Gly Lys Arg Ile Arg Asn Arg Phe Leu Asp Cys Asn Lys
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 Phe Leu Glu Ser Thr Phe Tyr Phe Pro Phe Val Lys Thr Met Asp Ala
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 Thr Ile Arg Gln Asp Phe Arg Tyr
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<210> 1381
 <211> 558
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1381
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 cagggtttgc cggtggcgga ttgtttcttc caaacgggca atctgctcgc gcaacacgcc 480
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<210> 1382
 <211> 185
 <212> PRT
 <213> Neisseria gonorrhoeae

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Gly Phe Gly Phe Val Gly Gln Val Xaa Gly Leu Val Phe Leu Phe Gln
 20 25 30
 Thr Thr Phe Ala Leu Phe Val Leu Gly Asn Arg Leu Phe Gly Met Gly
 35 40 45
 Lys Leu Leu Leu Leu Gln Arg Gln Phe Ala Ala Asp Ala Val Cys Leu
 50 55 60
 Val Leu Leu Gly Leu Glu Gly Gly Val Glu Arg Gly Leu Gly Phe Phe
 65 70 75 80
 Gln Phe Gly Gln Thr Leu Leu Val Phe Gly Asn Leu His Arg Pro Phe
 85 90 95
 Arg Gln Leu Gly Leu Phe Phe Phe Asp Leu Gln Leu Val Phe Phe Lys
 100 105 110
 Leu His Ala Asp Leu Leu Leu Leu Leu Met Asn Ala Leu Xaa Leu Arg
 115 120 125
 Leu Arg Cys Leu Leu Val Ala Phe Asp Ala Leu Val Gln Val Leu Leu
 130 135 140
 Met Ala Asp Leu Phe Phe Gln Thr Gly Asn Leu Leu Ala Gln His Ala
 145 150 155 160
 Ala Leu Val Ala Gln Phe Met His Cys Leu Leu Leu Arg Leu Phe Gly
 165 170 175
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<210> 1385
 <211> 558
 <212> DNA
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 ggcaacggtt tggttcggcat gggcaagctg ctgctgcttc aacgccagtt cgcggcggat 180
 gcggtttgcc tcgtcctgct gggtttgaa ggcggcattg agtgtggctt gggtttcttc 240
 caattcgggc agacgctctt cgtgttcggc aacctgcac gccattccg ccaattcggg 300
 ttgcttttct tccgcctgca actcgttttc ttcaagctgc acgcggattt gctgctgctc 360
 ctgatggatg cgtgcacat gcgcctgcgc cgctgcttg tcgcgttcga tgcgttggtg 420
 cagggtttgc tgatggcgga tttgttcttc caaacgggca atctgttcgc gcaacacgcc 480
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<210> 1386
 <211> 185
 <212> PRT
 <213> Neisseria meningitidis

<400> 1386

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20 25 30
Thr Thr Phe Ala Leu Phe Val Leu Gly Asn Gly Leu Phe Gly Met Gly
35 40 45
Lys Leu Leu Leu Leu Gln Arg Gln Phe Ala Ala Asp Ala Val Cys Leu
50 55 60
Val Leu Leu Gly Leu Glu Gly Gly Ile Glu Cys Gly Leu Gly Phe Phe
65 70 75 80
Gln Phe Gly Gln Thr Leu Phe Val Phe Gly Asn Leu His Arg Pro Phe
85 90 95
Arg Gln Phe Gly Leu Leu Phe Phe Arg Leu Gln Leu Val Phe Phe Lys
100 105 110
Leu His Ala Asp Leu Leu Leu Leu Leu Met Asp Ala Leu His Leu Arg
115 120 125
Leu Arg Arg Leu Leu Val Ala Phe Asp Ala Leu Val Gln Val Leu Leu
130 135 140
Met Ala Asp Leu Phe Phe Gln Thr Gly Asn Leu Phe Ala Gln His Ala
145 150 155 160
Ala Phe Val Ala Gln Phe Val His Arg Leu Leu Leu Arg Leu Phe Gly
165 170 175
Ser Leu Gln Gly Val Tyr Phe Val Val
180 185

<210> 1387

<211> 504

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1387

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ggcgatttgc tgccggtagt tttgtttttg cgggttgagt ttgtggacgg cgacttcggc 360
aagcccgtat tggcgggttg cttccaacag ggcaagctgc gcctgtttca gacggccttg 420
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<210> 1388